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THE ANATOMICAL FACTS AND CLINICAL VARIETIES OF TRAUMATIC INSANITY.¹

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Considering the meagre knowledge of unmistakably reliable facts of etiology in mental disease, traumatism would seem to furnish unusually clean-cut conditions of interference with the mechanism of sensory-motor plasticity. Yet both as to frequency and the nature of the actual conditions there is a great uncertainty. Some writers include—bowing to the crude sense of the word—all mental disorders in whose etiological constellation any kind of traumatism plays a rôle, even a surgical operation on a totally indifferent organ, or a fracture of an ankle (curiously enough they are not consistent enough to include the puerperal cases); also, insolation is frequently included. In this study, I shall consider chiefly those disorders which are the direct and obvious result of some traumatic interference with the brain. Theoretically, trauma figures prominently among the distinguishable types of possible disturbances of the cerebral functions, through the rôle it may play in disorders of growth and of nutrition, inflammation and tumor-formation, and in derangement of blood- and lymph-circulation. Even in the "psychogenic" disorders, trauma has its place in the form of mental shock. In most of these directions, one would expect to deal with a very definite entity, a welcome and solid ground in this period of rather too verbose explanations by auto-intoxication.

¹ Based upon observations accumulated from 1896-1902 at the Worcester Insane Hospital, with the much-appreciated help of its staff.

Unfortunately the simplicity is only apparent. There seem to be so many ways for the nervous system to suffer from trauma, even if we limit ourselves largely to the brain.

The most important ones are collisions with other objects, falls, or a meeting with projectiles. Both types produce direct local and more general effects. It further seems quite important to consider the sensory effect—the variable extent of fright, and the emotional consequences of loss of work and litigation.

In order not to mix together a large mass of heterogeneous material we shall try to maintain clearness and distinctions by limiting ourselves as closely as possible to the effects of concussion and actual direct traumatisms.

What effects can traumatism have on the structure of the nervous system? We might distinguish:

1. The direct focal and the more diffuse destruction of the nerve-tissue or of parts of it; and the reaction of the tissues.

- a. The immediate effects—œdema.

- b. The scar formation.

2. The distinctly diffuse commotions in which the general reaction and the psychic elements preponderate, including the remote reactive results of exaggerations of vasomotor and emotional responsiveness. A brief review of some effects of trauma will give us the material on which to make the distinctions.

Simple Contusions.—The general arrangement of the cranial cavity furnishes special opportunities at the point of maximum impulse and a point opposite it; further at points where the unevenness of the base or the existence of the tentorium leads to focal contusions. Such disorders are seen in patients falling, in epileptic convulsions for instance, chiefly at the tips of the temporal lobe, at the base of the frontal lobes and, as Duret showed, in the central gray matter surrounding the 3d and 4th ventricle. The probable reason for this localization is the great unevenness of the base of the cranium. Tillmann claims further that *lacerations* are produced in the brain itself at the points at which tissues of different specific weight meet—this would be the case in the ventricular linings and in the pia owing to the difference in the specific weight of the cerebro-spinal fluid and the tissue, and especially at the juncture of gray and white matter. The *hemorrhages*, as such, are as a rule not very copious unless the menin-

geal arteries burst, or where an already affected blood-vessel yields—sometimes several days after an injury in the so-called delayed apoplexies (Bollinger). The statement that the ventricles were filled with blood should be taken with caution considering the rough method of a usual brain-autopsy. Since we know of intracranial hardening with 10 per cent formalin before the brain is handled, these findings have been rare.

Many of the lesions are really a hemorrhagic infiltration of contused brain-tissue, such as we have met with in Case 1, a patient with typical senile dementia, who fell accidentally in the ward, backward on the occiput. He was unconscious $\frac{1}{2}$ hour, but the third day he died in coma with bronchopneumonia. No fracture. Over the right parietal lobe and all around the occipital poles, and especially around the right cerebellar hemisphere there were subdural clots; also a few in the left frontal and both temporal fossæ; moreover there were deep hemorrhagic contusions of the fusiform gyri less marked on the right.

Case 1. L. H. S. Born 1831. Father and two aunts were insane. No accurate history is available. In 1898 the patient is said to have had a sunstroke. He then stopped working. During the last months he has become very perverse; he would get up and build a fire in the night thinking it was day, and go out on the street and sometimes stay out all night; he would get excited and did not let his wife have wood and coal. He wandered away from his home to an adjoining town and walked six miles to his daughter's, saying he was going home. The physicians found him exhausted and restless; slow in answering and talking irrelevantly; he walked about the room, went to the window and looked out and laughed.

The patient was admitted January 12, 1900. He was restless, walking about the hall, saying little except: "I guess I will go home this evening." He was inclined to resist his bath but submitted to the rule; at supper, however, he refused to eat because he was offended at having been bathed. When he is requested to do something he is very contrary and irritable and inclined to fight. He requires to be pushed into the dining room; then he is too angry to eat; he walks about the room; refuses to be seated, takes off his coat without any reason except "It is none of your business." He requires constant watching lest he take off his clothes and shoes; but January 14 and 15, the attendant has to undress him. After the interview he refuses to leave the room.

Physically he claims to feel well; he is rather tall, somewhat emaciated and shallow; he has varicosities of the legs, thickened and tortuous radials, beginning arcus senilis, no heart lesion; a barrel-shaped chest and scaphoid abdomen. The hands and forearms shake and the tongue has a gelatinous tremor, and the gait is relatively slow and tottering.

In conversation the patient is suspicious and evasive and irritated by questions and unable to grasp the whole situation, takes the examination for a "mess of lawyers," frequently answers "None of your business." Or to the question, where are you, he says "Don't you know? Well, I won't tell you; well I would give up my business," and when he was told it was the Worcester Insane Hospital, he said: "I would like to know why." The date was given as Friday, in "November, ain't it," 1890, 1889 or 1890. The localization in time both of remote and recent events is very defective and variable. "I shall be 70 the 30th of this month, November. I was born in Boston, and went to school for a year; I had two brothers and two sisters; the youngest sister is only three years old"; and the brothers' age he does not remember. His father is living in S. and 73 years old. When the discrepancy was pointed out he said: "Can't you take a record from the Bible?" When did your father die? "Well, he is living and was living—and you want to get me mixed up in a scrape—well, I had just as lief as not." He says his wife is in B., Mass. (correct) and he has four children; two days later he says his wife lives in S., Vermont, and that she is 26 years old, that he has no children and can't tell "exactly" when he was married, "I think 6 years ago." January 15, he takes this place for the Horticultural Building in Boston. He thinks he has been here not more than three or four weeks (two days). He mentions no definite delusions or complaints.

January 17, 1900, the patient fell on the floor on the back of his head. He immediately straightened out and stopped breathing until the attendant performed artificial respiration. He remained unconscious about half an hour, then became gradually clear, and in about three hours said to the attendant he was all right. He fell asleep, but at 4 A. M. the physician found him lying flat on his back with open mouth, fixed eyes, deep breathing and slight rattling. There were no symptoms of paralysis, no difference of pupils. During the examination there were several hiccoughs. Nothing was found in heart or lungs. No fracture of the skull was detected. The temperature was 100.2°; pulse, 80; respirations, 15. At 9 A. M. there was much flickering of the muscles of the thigh and leg on both sides and on the right an occasional contraction of the muscles. The toes are in dorsi-flexion which is increased on plantar stimulation and especially hard to overcome on the right; cutaneous and tendon reflexes about normal. There is withdrawal from pricks only at the sole of the feet, hardly at all in the arms and hands, slightly in the face. Forward movement of the jaws stops rattling. Towards evening he could be roused partially by calling his name and he swallowed fairly well, but he became more and more comatose and the temperature rose to 105° in the course of two days. He died at 11 P. M., January 19, 1900.

Autopsy.—No fracture of the skull was found, but several hyperostoses on the inside of the frontal bones, especially marked on the left and several others in a depression just behind the bregma. To these regions the dura is firmly adherent. The inside of the dura appears free in the frontal part; *over the right parietal and all around the pole of both occipital lobes there*

are, however, *marked clots inside the dura* and a rather large blood clot *on the right cerebellum* and a more limited membrane over the left. Only *in the left frontal fossa* is there a small clot and *in either temporal fossa* several diffuse membranes and a few small clots. The blood-vessels are hard at their exits from the canals only. There are *marked contusions especially of the region of the fusiform lobe* on the left and a little less under the right third temporal gyrus. Brain as a whole weighs 1260 g. *The floor of both temporal lobes proves greatly contused* to the ventricle.

The lungs weigh 450 and 570 g., with thickened pleura at the apex, are slightly cedematous, and there are bronchopneumonic foci in both lower lobes. The left pleura has several ecchymoses and a small amount of fluid in the cavity. The heart weighs 250 g. and has a decided thickening of the edges of the mitral flaps, with small rough nodules; no atheroma of the aortic valves or the beginning of the aorta, but a number of ulcers in the descending aorta.

The kidneys have a few small cysts and weigh 100 and 104 g.; old adhesions of the ascending colon and omentum to the abdominal wall; 12 gallstones.

Walter B. Cannon of Harvard Medical School (Cerebral Pressure following Trauma, American J. of Physiology, Vol. 6, p. 91-121) lays much stress on the *swelling* of the injured tissues as a source of immediate rise of intracranial pressure. I consider this one of the most important contributions to this problem, and an excellent explanation of many otherwise mysterious "molecular changes."²

Whether the *cranium* is fractured or not means relatively little. It would seem, however, that for chances concerning life, a relatively extensive destruction of the skull is rather more favorable than otherwise. I can present a photograph of the skull and brain of a patient (*Case 2, M.*), who was kicked by a horse at the age of 7; pieces of bone were removed. The patient had more or less persistent frontal headache and slight deafness on the left side; but no mental defect. She married, brought up a family (the children suffer from frequent headaches) and has been perfectly well. At the age of 75, she had a shock with sensory aphasia, a renewed attack at 77, and a few weeks before death she was admitted in a condition of depression and dementia; the autopsy showed a shrinkage of the middle part

² On this ground of changes of osmotic relations, we understand why Polis found animals previously made anæmic more endangered by concussion.

of the left first temporal gyrus, accounting for the terminal aphasia, and no other macroscopic brain lesion traceable to the injury, notwithstanding the huge defect of 10 by 2 cm. in the skull.

The following types of *residuals* of injury and their consequences deserve mention. We find rather frequently an incrimination of *depressions of the skull*. Our series does not happen to include any such case. A few are mentioned by Starr (Brain Surgery, p. 267-271), and in my therapeutic remarks.

In two of our patients, *residuals of subdural hemorrhage* proved to be of decided importance. One case has only been examined operatively, the other by autopsy. *Both give valuable hints for operative treatment even where there is no depression.*

The first case showed a clot in process of organization and was considerably benefited by operation. The second case showed an ossified plate and spur over the left frontal lobe, besides the effects of a fall in the terminal status epilepticus.

Case 3. F. T., mill operator, married, about 38 years old, of cheerful, sociable disposition, about January, 1897, was struck on the head by a 57 lb. weight. He was not knocked down, but there was a *hematoma of the scalp*. Since then the patient has had *attacks of headache and dizziness*, a few times he vomited his coffee in the morning. His *character changed*; formerly jolly and active in social enterprises (theatricals), he became silent and non-responsive, at times he wandered away for several hours at a time and would stone the friends who followed him; about June his work became less efficient owing to the headaches; he thought the workmen put things in his way; it was their fault that he could not do things. About June 25, he had a *violent outbreak*, in which he nearly succeeded in killing his wife with an axe and smashed furniture. July 2, he had to be committed; in an attack of headache he again had become excited, complained of being full of electricity and that his wife and children might injure him; the pictures on the wall bothered him; he ordered everybody out of the room.

Under observation he showed on admission (July 2, 1897), and for nearly three weeks a condition of *sulky delirium with vehement blind outbreaks*; he would get up and rush to the window and smash the glass, or clutch the steam-pipe and shake it violently to "shake out the steam." He talks deliriously in German, says he sees faces, one piece of furniture on the ceiling, another hanging from the window, the children all topsy-turvy, and breaking all the windows—"That won't do, Mary." In the struggle with attendants the patient broke a rib and was restrained in bed. He was inaccessible to conversation till July 23, when he began to listen and to give an account of his headaches and the injury. He still would lie on the

ficor, was *indifferent or sulky, diffident*, urging unreasonably to go home. July 28, he gave a patient 15 cents with which to buy tobacco, and when he did not get it, he said "fool me," had a violent outbreak and began to beat his head against the wall, and had to be restrained. He is found in great distress. "Help me, help me, for heaven's sake, help me—take off the fetters, take off—take off—the—the—the—, these fearful flies eat me up—I—I—I don't do any thing. I am one of the best of men." Can't you be reasonable? "I am reasonable." You must stay in bed. "I can't stay in bed; the bed oppresses me. I will never leave my bed—I want to go home to my wife and to my baby—my baby (the patient has five children living); I do not cry; I do not cry—my baby—my baby—my children, children, children, etc."; quite inaccessible to reason. He complains of *fearful dreams*; one morning he kept shouting: "Everything is dry in the garden," one night he was "dead in the lower world." At times his good-will can be held for a few moments, but he rapidly drifts into shouting, clamoring for his wife, or he makes a sudden assault. August 2, *disclaimed all memory of assaulting* the physician two days before, was much surprised, and said quickly if he did so he was sorry. The next day he was lying on his back with the bed sheet drawn tightly from the feet to the head, the ends tucked under him, the hands folded in prayer; he could not be diverted.

The first *physical examination* was *essentially negative*. The patient was a short man of tremendous muscular power without any nervous or other symptoms.

The further observation showed that relatively quiet periods with fair orientation but unreasonable general attitude would, with or without attacks of severe headache (which yielded slightly to phenacetin 0.80, but were aggravated by acetanilid), show sudden outbreaks either of fault-finding, or a blind attack without warning, or dream states. A nocturnal noise up-stairs started him to claim the next day: "The ceiling is coming down; I am oppressed." He complains that he cannot understand the people, that he has forgotten all he learned at school, cannot learn to read English. At times he keeps a promise to abstain from violence, but is easily irritated again. "If you want to kill me now, kill me; I cannot stand this now any longer; I don't know what this means; I want to go to my children." He claims he can work in the mill. At times he has a *summary remembrance* of his troubles. Thus, on December 9, he admitted "I fought with the attendants but I do not remember why." "That is an old affair, I had rather not speak of it. It is not my nature to speak so freely of my own affairs. I do not remember why I struck; they laughed at me, and I got tired of it." "I would like best if I could shut my eyes."

A *renewed examination* of the head showed nothing but *very slight lateral nystagmus* on extreme turning of eyes, and *on tapping the scalp with a hammer a painful spot over the right parietal protuberance*. The *head-aches are mostly right-sided*. A permission for an exploratory operation was obtained, and it was carried out by Doctor Homer Gage as follows, on December 27, 1897:

The shaving of the scalp exposed a small scar over the right parietal prominence near the "painful" spot; the usual incision was made with this scar in the center; the skull was found intact, both the external and the internal plate. The dura appeared somewhat bluish and, on incision, brownish fluid escaped, and brown, half gelatinous material was found. A second trephine opening was made further forward and the same material of partially organized clot was exposed. It seemed possible to remove practically the whole through the somewhat enlarged opening. The pia appeared normal. The fluid contained small hematoidin needles and very few leucocytes. Its amount was difficult to judge, the thickness of the layer was hardly more than 5 mm., and the whole mass probably not more than 25 or 30 cc. The wound healed perfectly smoothly.

The patient did well. December 30, in the evening he was sulky, irritated by "foolish" questions; he had rather severe headache, but was relieved by phenacetin 0.80. It reappeared a little for a few days only. The patient remained rather diffident and impatient, and only once (January 28, 1898), when being photographed he burst out suddenly: "Ich will nicht, ich will nicht; ich will nach Hause gehen"; he took of his coat as if for a fight and started against the photographer. He attributed the outbreak to his impatience.

On his discharge, January 30, 1898, the patient was unappreciative. He did well until March, 1898, when, after an alcoholic excess, he broke up the furniture in the house and threatened the family; and in December, 1898, he was arrested for disturbing the peace (intoxication) and sentenced to three months in jail. Since then he has done well when abstaining from drink.

Summary.—Traumatism without marked primary results, except hematoma of the scalp. Change of character; sulkiness, irritability; intolerance to alcohol, attacks of headache with violent outbreaks with only summary remembrance. Removal of an old subdural clot over the right frontal lobe. Disappearance of headaches and outbreaks of violence; but residual susceptibility to alcoholic excitement.

Case 4. F. L. M. Born 1838; patient's grandfather died insane; an aunt died with senile dementia at 70, and her brother became insane at 44, and is now 50 years old and has attempted suicide once or twice.

Personal History.—Patient married in 1869, had no children and lost her husband, 1886. She was a singular person, excessively neat; "nothing suited her."

In 1886 a runaway team dashed her head against the pavement, broke her false teeth to bits in her mouth, but the skull did not seem fractured. She was stunned, taken to a physician's office but recovered and there was only occasionally a whistling or whirling around sensation which was followed by staggering and losing consciousness, further occasional double vision when looking towards the left. There were also slight headaches which she "could throw off by making a few passes over her head." In the course of years she became more emotional, restless and sleepless, care-

less with lamps and lights, and she often declared she couldn't endure the people with whom she lived and claimed they didn't use her well. She was brought to the hospital under the impression that she was to consult an oculist and became very violent, screamed and kicked the nurses when she found out that she was deceived.

On admission, September 22, 1896, the patient was 4 ft. 10½ inches and weighed 82 lbs.; thin but strong; she was deaf in the right ear, had normal reflexes, normal pupils and no evidence of organic lesions. At intervals of several months she would have one or several convulsions and after this be more emotional and dazed. Her memory proved to be much weakened. March, 1897, she said she was slowly improving and that two weeks ago she had come to herself and looked around and found herself in a strange place and didn't know how she had been taken from home and scolds for being here. She claims she never had any fits before she came here and only used to faint easily at home.

After September, 1897, she became considerably confused with loss of memory increasing. She often asked for something to put her out of the way; she had to stay in bed often, was frequently mute and sulky, didn't know where she was. At other times she would be exhausted and rather silly, would jump out of bed and dance.

After April, 1898, she frequently talked of her personal appearance, scolded for not having her teeth and clothes, was easily puzzled. At the sight of another patient's name on a handkerchief she said "I thought my name was F. M., but here it is H. M. I can't remember anything." She often talked of her looks. "I looked so dear; I always looked so nice, I had false teeth and little tweezers to pull these hairs out. I curled my hair and had such nice clothes." When she was not irritable, she usually smiled pleasantly when spoken to. At times there was a suspicion of hallucination. On October 22, 1898, she said she heard voices ask her where she is and what her name is and on December 30, she said in a whining tone, "They have wronged me. They say they are going to hang me." Then she would go over to her terrible looks, etc. Then she would speak of the runaway, how her brain was injured, or scold, "This is a devil's den; they are all devils. You have taken my teeth, my gold watch and rings and all my good clothes," intermingled with very profane expressions. Often, after a convulsion she would pick and tear the clothes, try to find the teeth under the blankets, throw her shoes out of the window. "I have never done any wrong and it isn't right to keep me here." She was not oriented. "The year is 1850, the place Braggville, Mass." After a series of 12 convulsions, on August 24, 1899, she remained permanently in bed. "Ashamed of herself, of her looks," more and more untidy, destroying clothing, etc.

April, 3, 1900, she had a status epilepticus in which she fell. It was followed by coma lasting until she died, April 5.

Autopsy was made one hour post mortem. There were greenish bruises over the right eye. The sutures of the skull well preserved. On the right

frontal bone there were in front of the coronal suture *two parallel shallow superficial depressions*, one 3 and the other 1 cm. (from vessels?). The dura is firmly adherent especially over the angle of the right frontal bone close to the bregma and very uneven. On the inside of either frontal bone there are a number of depressions similar to those produced from Pacchionian granulations and in two of them oval, pea-sized hyperostoses. The vascular sulci are rather deep and ragged. The diploe fairly abundant in the center of the bone. The *dura* is firm, rather loose on the left side; *on the right* there is in the posterior part of the convexity a broad clot, extending as far forward as the bregma and partly in a very thin layer. Over the frontal region there are a very few independent *bloody membranes*, also a few on the inside of the left dura—*evidence of the effect of the fall in the last epileptic episode.*

On the left there extends from 8 cm. behind the bregma *along the attachment of the falx* a *calcareous plate* very uneven on the inside 5 cm. long and 3 broad, and just in front of this another piece begins 12 cm. long and at the broadest 4 cm. This plate follows the falx and extends forward between the frontal lobes as an independent spur 4 cm. long and 1 cm. in thickness tapering into a free point. The dura of the whole right middle fossa and part of the anterior fossa and of the clivus is thinly lined with blood clot. The brain weighs 1150 g. *The right temporal lobe at its tip is covered with a red membrane.* The two frontal lobes are separated by the spur. The pia of the frontal lobes is thickened and whitish and has marked Pacchionian granulations farther back. The cranial nerves are equal, with, perhaps, the exception of the left 6th nerve which appears a little thinner than the right one. (Intracranial hardening of the brain with 10 per cent formalin.)

Further there are obliteration of the left pleura, oedema of the right lung, arteriosclerosis of the coronaries, mitral valve, and ascending aorta; a double ureter in the left kidney and uterine fibroids.

Summary.—Family history of insanity. Cranial injury at 48 followed by occasional whistling or whirling sensations, staggering, a loss of consciousness, double vision, slight headache, emotionalism, fault-finding. Admitted at 58, with deafness in the right ear, convulsions, loss of memory, episodes of sulky or silly behavior, general deterioration. Death after a fall in a status epilepticus. Fresh traumatic hemorrhages. Ossified plate and spur inside the dura to the left of the falx, probably from an organized clot.

The lesions of the brain as such leave varying residuals, the most frequent are *small foci* of softening or defects of cortex in the regions of predilection, the base of the frontal and temporal lobes. Köppen makes much of the distinction from other foci of softening by the fact that in the traumatic gouging out of cortex there are residuals of blood and, moreover, very often at least, an absence of the glia margin just underneath the pia.

The latter condition is of value when present; the preservation of the "molecular layer" means nothing, since in several of my cases of certainly traumatic origin the sub-pial glia was very broad over some of the foci.

Besides these palpable focal lesions we find furthermore a great number of *diffuse effects* which are usually overlooked and cause no focal symptoms, but which are well illustrated by the following case.

Case 5. The brain was that of a boy who exploded his gun and had his left eye and the base of the left frontal bone smashed by the breech-pin which was extracted after removal of the eye by Dr. Swazey at the Worcester City Hospital. The boy seemed to make a good recovery, although there was a distinct prolapse of brain fungus into the skin covering the wound. He was up and was bright without any complaints. Clinically no neurological examination was made, because superficial observation roused no suspicion of any special brain-symptoms, other than the fact that the boy had lost the sense of smell (statement of the nurse). There were no abnormal mental traits; the patient was up and quite well, until a sudden change occurred four weeks after the accident. When I saw him he was in a coma which had developed with fever within two days and in which the patient died on the 3rd day. Doctor F. H. Baker kindly gave me the brain for examination. There was no meningitis, but some pus in the lateral ventricles, which had not been reached by the probe of the surgeon.

The brain was hardened in formalin and subjected to a study with the Marchi method (frontal sections through both hemispheres).

In short the *primary destructive lesion* includes:

1. The left eye and part of the optic nerve.
2. Almost the entire orbital surface of the left frontal lobe from the anterior pole backward to within about 1 cm. of the orbital margin of the cortex (or lateral olfactory gyrus) on the mesial and 2 cm. on the lateral side of the orbital surface. The mesial aspect of the left frontal lobe shows a destructive lesion only along the crest of the gyrus rectus. The median olfactory gyrus and the pedunculus corporis callosi are intact. The white matter participates slightly in the posterior area, and probably to a depth of 1 cm. further forward. Beyond the area of actual destruction (infiltration of granule cells in a loose spongy net), there are in some parts, especially towards the corpus callosum, some perivascular extravasations of blood; and the sheaths of most blood-vessels are rather heavily loaded with blackened material.
3. In the right frontal lobe, the anterior end of the gyrus rectus and of the adjacent orbital cortex is involved superficially.
4. The olfactory bulbs are embedded in the debris of the crushed substance of the frontal lobes.

The consecutive "Wallerian" degenerations are as follows: In the frontal lobe rows of Marchi granules are seen to proceed into the white substance and especially into the knee and rostrum of the corpus callosum; the distribution of degenerating fibres is smallest in number towards the gyri of the convexity; and the bundles collect most densely in the anterior limit of the internal capsule; bundles of considerably blackened fibres being side by side and distinct from bundles which are quite free and evidently come from the convexity and from the corpus striatum. The left internal capsule shows considerably more blackened bundles than the right, in accord with the extent of the lesion.

The degenerating fibres in the rostrum of the corpus callosum can be partly followed to the lateral aspect of the right frontal lobe.

The caudal course of the frontal projection-fibres is difficult to establish owing to the imperfection of the impregnation. *Unmistakable strands of degeneration* are found:

a: In the ext. capsule;

b: In the internal capsule, rather diffusely scattered (even in the post. limb);

c: In the lamina between the head of the caudate nucleus and the frontal median cortex;

d: In the cingulum;

e: The olfactory apparatus: *Both olfactory tracts are in complete degeneration.* The region of the caruncula is not well impregnated, and the connections with the uncus, the anterior commissure and the septum are not established, while the continuation through the capsule of the caudate nucleus (underneath the area of Broca) with the striæ Lancisii is quite plain.

The striæ Lancisii are well impregnated only in the anterior parts of the corpus callosum (since the posterior parts were treated too late to give the reaction). The great mass of the fibres of the stria forms the median edge of the "olfactory gyrus" and its "white substance," the so-called stria media, and a row of cross-sections spreads to the side over the callosal surface. There are no transitions into the cingulum.

These findings would make it quite probable that the great mass of the fibres of the human median stria Lancisii has its origin in the olfactory bulb.

f: The optic nerves and chiasma had shown no obvious differences macroscopically. The result of the Marchi reaction is satisfactory only as far back as the beginning of the optic tract.

The left optic nerve is full of black lumps in a concentric arrangement, so that the central bundle and a thick peripheral layer appear deeply affected, while the intermediate ring is almost free. Nearer the chiasma the central bundle is very large and the free ring narrower.

The right optic nerve shows a fair number of degenerating fibres, rather diffusely scattered over the area; only near the chiasma there is a slight tendency towards concentric arrangement—a rather large dotted central bundle surrounded by a free zone and a superficial dotted border leaving the mediodorsal border almost free.

The optic chiasma shows very plainly the *semi-decussation*. The details of the arrangement of the fibres will be published in another connection.

The slight degeneration in the right optic nerve was attributed by me to the next type of independent degenerations, until the possibility of inter-retinal fibres was again suggested by J. Herbert Parsons (*Degenerations following lesions of the retina in monkeys. Brain, Autumn, 1902, p. 257*).

As *independent damage* we put down the following bundles:

1. Numerous fibres in the *splenium* of the corpus callosum (easily injured by the tentorium?).

2. The *cerebral peduncle* and pons show but little degeneration and certainly no compact bundles.

3. The tegmentum, however, is affected in a peculiar way in the *median and lateral fillet*. From the nuclei of Goll and Burdach degenerating fibres can be followed into the interolivary stratum and the entire field between the two hypoglossal roots. The pyramids are almost free, the one being slightly more affected than the other, whereas the degeneration in the fillet and in the posterior longitudinal fasciculus is fairly symmetrical. Whether Gowers' tract contributes to the lateral fillet is not certain. The degeneration is followed up to the midbrain.

4. The *superior cerebellar arm* is similarly affected, also the corpus restiforme and the marrow of the vermis.

5. The *fifth nerve* has a fair number of degenerating fibres on both sides. The *nuclei of the eye muscles* show no well systematized axonal reactions (sections too thick and only stained with hematoxylin.)

The principal conclusions derived from this brain are:

1. The median striæ Lancisii are degenerated after destruction of both olfactory bulbs.

2. The optic chiasma shows unmistakable semi-decussation.

3. The *indirect scattered lesions* through the concussion are exceedingly extensive and involve mainly the splenium of the corpus callosum and the long paths—the fillet and the superior cerebellar arm. There is also a slight implication of both fifth roots and of the "normal" optic nerve.

The extent of such widely-spread disorders undoubtedly has something to do with the differences in the progress and outcome of cranial injuries and the effects of operations on the brain.

The study of *Scagliosi* (Ueber die Gehirnerschütterung und die daraus im Gehirn und Rückenmark hervorgerufenen histologischen Veränderungen, Virch. Arch., Vol. 152, p. 487-525), contains an extensive review of the experimental and anatomical material. In his experimental work (concussion of the brain) he found diffuse changes in the brain and also the spinal cord (which was not hit directly), and concluded that the glia cells are first altered (within 7 hours), the nerve-cells within 24 hours,

and that the disorder is one of anomalous nutrition, since otherwise its rapid spreading could not be understood.

The changes described in my case are, however, such as can be explained by more or less direct contusions and secondary degenerations; for the changes obtained by Scagliosi in rabbits evidence is yet to be furnished in man—a rather interesting problem, to be pursued with due reference to the studies of Cannon. *What is the ultimate fate of such changes?*

In the older literature we find many statements concerning *secondary progressive lesions* developing as a result of the direct effects of traumatism. *Friedmann* and *Kronthal* have described a few cases of *traumatic neurosis* for individuals, who years after the accident developed premature *arteriosclerosis* and hyaline degenerations of vessels, an outcome which would not surprise one considering the vasomotor excesses to which the patient is exposed. Our Case 7 might be mentioned in this connection (p. 387); but I should call the *arteriosclerosis* a coincidence.

There is also a frequent reference to *general paralysis* having developed on traumatic ground. This is pardonable in a period in which there is still uncertainty concerning what the term *general paralysis* is meant to cover. If we class there all the cases with dementia and forgetfulness and some neurological symptoms of tremor and speech defect, without any regard for the clinical development and the lesions found and for the etiology, there is no ground for a discussion. If, however, we leave the ground of the eighties of the last century, when great efforts were made by some writers to distinguish the *general paralysis* of metasyphilitic origin as *pseudoparalysis* from the supposed legitimate *general paralysis* of the over-worked business-man; and if we mind the teachings of *Hirschl* and others, and also the anatomical definitions of *general paralysis*, we shall probably be more critical concerning the relation of *general paralysis* and *traumatic dementia*. A traumatism does not make a previously syphilitic person immune against *general paralysis*, but is apt to add to the chances of precipitating the cerebral reaction; on the other hand, a traumatism will hardly be able to bring about the paralytic brain-changes without previous syphilis. I regret to say that the two cases in which there was a suspicion of gen-

eral paralysis were not especially well observed clinically. The facts are briefly as follows:

Case 6. J. O'C. Born 1849. Family history, unknown. Personal history unknown, beyond "intemperance and traumatism."

Admitted March 11, 1895, from Deer Island, as demented, filthy, destructive of clothing, dull, incoherent, untidy; he thinks the Island is Roxbury, that he is in a business block, engaged to work, while he is a prisoner at the House of Industry, pardoned for insanity. April 27, 1896, 12 convulsions, beginning with the left side of the face and extending over the left side of the body followed by a dazed condition for several days. November 1896, tongue to the right, knee-jerks increased, anæsthesia to pain on the outside of the left leg. Considerable gaining of flesh. Apathetic torpor. Death, October 1, 1897, after three convulsions.

Autopsy two hours post mortem. Skull 500 g. with depression in the middle of the forehead with adhesion to dura. No lesions of general paralysis. A small focus of softening in the right frontal lobe close to the rostrum; no granulations of 4th ventricle; basal arteries and nerves normal. Acute dilatation of the heart. Caseous encapsulated tubercles of both lungs, slightly granular kidney, œdema of both lower extremities.

Summary.—According to the commitment paper, alcoholism and traumatism. Deterioration in the workhouse. Epilepsy followed by incoherent dementia with feeble occupation delirium and later apathetic torpor. Depressed scar of forehead. Small focus on the median side of the right frontal lobe underneath the rostrum. None of the lesions of general paralysis.

Case 7. M. R. Born 1836. Intemperate up to five years ago, probably fracture of the skull in 1880, with hemorrhage from the ears; unconscious, and for several days disoriented. After a short period of work, he complained of heart disease, inability to work, stayed around the house for the past 14 years, very irritable, spitting much; for the last six years preparing his food himself on account of fear of poisoning; suspicious and afraid to leave the yard; restless at night and drowsy during the day; inclined to go into the cellar in his night clothes at night; very noisy at times.

Admission, February 6, 1898, with fair appreciation of persons and the immediate surroundings, deficient time orientation (1897 or 1798); partial insight. He says he is cross, hard to get along with; his memory is poor for recent events, somewhat better for the past. Mathematical tests correct. He regrets not being able to control himself. The right pupil is wider than the left; the knee-jerks brisk; the gait feeble, tottering. There is mitral insufficiency with dilation; advanced arteriosclerosis. In May he had an episode of talking about gold, became restless, smashed windows. Later he became dull, stupid, hardly nodding or whispering "yes" or "no," vegetating for months in bed.

Autopsy one hour post mortem. Decubitus. Heart 410 g. with insufficiency of aorta and mitral; slightly cystic kidneys. Atheroma of cerebral blood-vessels; thickening of pia; brain, weight 1485. On the right side,

peculiar gouged defects covered with gelatinous thickened pia of L. T.3 and T.2 from near the tip to the level of the bifurcation of the Sylvian fissure and encroaching on T.1 for 16 mm. in its anterior 4th. A similar depression of 8 x 12 mm. in the right orbital surface just outside of the anterior outer limb of the H figure. Another hole 6 x 8 mm. on the orbital surface at the end of the spur of the Sylvian fissure and a small one just outside the middle spur. On the gyrus behind the vertical spur a depression slightly invading the foot of R C A, 25 x 16 mm. Another small one in the limb forming the lower lip of the inferior frontal sulcus, and one small erosion 2 x 4 mm. in the middle of the posterior central convolution. Two small ones near the foot of the post-central sulcus involving both borders.

On the left side: Only shallow puckerings and depressions in the anterior half of T.2 and T.3 and less marked ones in the extension of T.2 towards the angular gyrus. *The depressions are as if produced by arachnoid cysts* but the substance of the lesion is intensely gray. Dense granulation of the lateral ventricle round the foramen of Monro and especially between the choroid plexus and the stria cornea. The roof of the lateral ventricle shows numerous transverse depressions, more marked on the right than on the left.

No special vascular changes and no excessive gliosis. Residuals of hæmatin. A description of the serial sections will be given elsewhere.

Summary.—Cranial injury, change of character, paranoiac development, commitment in the 14th year. Senile arteriosclerosis. Loss of memory. Peculiar outbreak of violence, followed by pseudo-stupor. Very extensive superficial traumatic defects of both hemispheres, especially at the base of the temporal and frontal lobes.

The question in such cases is: Do these conditions necessarily remain stationary or can they become progressive, i. e., go beyond the mere repair of the initial damage?

This is a very difficult point. Even the very first effects are difficult to explain. A certain portion of damage in the nervous tissue must be direct contusion; another might perhaps find readjustment, were it not for the hemorrhages, and the traumatic œdema; and we may seriously ask whether this swelling as such does not aggravate certain subtle changes by making the nutrition difficult. The combined effect is a certain degree of necrosis and of temporary malnutrition, and subsequent repair as far as possible. The death of nerve-cells seems to be irreparable. To what extent parts of nerve-cells are replaced in the central nervous system, we do not know; and after the Marchi method ceases to be available, i. e., about 4-6 months after an injury, the only available measure of actual damage is furnished by rather coarse scars and so-called secondary degeneration connected with them.

Among the numerous general paralytics of whom I have autopsies, I have not one with actual evidence of even traumatic auxiliary lesions and but very few with a history of injury; a result which coincides with Kaplan's (Allg. Ztschr. f. Psych., Vol. 56, p. 292). There are, however, in the literature undoubted cases, in which the paralytic development was precipitated by injury. It would seem that those cases presuppose a previous syphilitic infection. It is well to leave the question open and to collect carefully the facts concerning the cases of traumatic dementia allied to general paralysis.

The case published by Frost (AMERICAN JOURNAL OF INSANITY, April, 1903), is probably one of the clearest illustrations of progressive secondary changes many years after a very extensive brain injury. This case also shows the clinical difference from general paralysis (see p. 132).

There remains the question of *tumor formation connected with traumatism*. This is a very difficult problem. Among the cases which I have observed, there are several which refer to a traumatism, in some way related to subsequently manifest tumors in two localities—the region of the chiasma^{*} and the corpus callosum. In the last-named group it was difficult to say whether the fall was not the first symptom. One of the two patients, *Case 8*, fell backward and developed marked amnesia and a semi-delirious condition with the characteristics of a Korsakow psychosis, later hemianopsia and finally central blindness—tumor of the splenium of the corpus callosum with a spur into each occipital horn.

Case 9. The second case, a woman of 62, worked efficiently up to January 23, 1903, when she fell on the ice, was found unconscious, paralyzed on both sides; sphincters relaxed. She recognized her friends on the first day but not later. The temperature rose the second day but subsided in 24 hours. The patient became more and more delirious, she would laugh, cry, twist her clothes, try to throw herself out of her chair in apparent fright and was very restless. She did not answer intelligently; occasion-

^{*} See the case reported by me in the New York Neurological Society, J. of N. & M. Dis., Vol. 30, p. 216. A case of fall on the head in diving, development of a tumor severing the chiasma, and affecting the motor fifth; later continuous oozing of cerebrospinal fluid from the nose. Adler (Ueber das Auftreten von Hirngeschwülsten nach Kopfverletzungen. Arch. f. Unfallheilkunde, Vol. II), has collected 118 cases of brain tumors of probably traumatic origin.

ally the family could catch a word. On admission February 16, stupor with Cheyne-Stokes respiration, right knee-jerks exaggerated, suspicion of Babinski reflex on the right; slight drooping of left corner of the mouth, tendency of eye-balls to roll about and to rotate to the right side when the eyes are open. No spontaneous motion on the right side, although there is considerable strength. Difficulty in swallowing, slight tremor of the right hand when elevated. Left arm-jerk exaggerated, right knee-jerk exaggerated. Both big toes, in extreme extension, became more so on stimulation of soles.

As a rule the patient was totally unresponsive, at times brighter, so that on February 21 she showed a tendency to extend the left hand, shook hands with the right hand and mumbled on request, even held a pad and pencil correctly without succeeding in writing. February 25, right hemianopsia was noticed; February 27, parotitis on the left, inability to swallow, double Babinski; right knee-jerk exaggerated. Rise of temperature and pulse. Death from lobar pneumonia. Tumor of the anterior two-thirds of the corpus callosum invading especially the left hemisphere.

Turning to the VARIETIES OF FUNCTIONAL EFFECTS of cranial traumatism, we get a very good illustration of the *multiplicity of effects of one kind of cause in the constellations of pathology*.

The first question is: Has the *localization* of the injury, as such, anything to do with the production of the symptoms, i. e., Have we any knowledge of mental disorders which would depend on clean-cut defects of the brain?

This question is answered with the problem of the so-called organic psychoses from focal lesions. The answer is practically negative for small lesions. Even in aphasias—the type of affection which is apt to cut most deeply into the mental functions—we do not expect of necessity a disorder which makes the patient non compos mentis, except where the lesion is very extensive and interferes chiefly with the so-called leading functions: that of the understanding of meanings and of assimilation and elaboration of speech and signs.

This experience is fully corroborated by brain surgery. To my knowledge, mental derangement is rarely put down as a primary danger to be considered and Dr. W. W. Keen kindly informs me that in none of his cases has insanity followed.

Nevertheless we must refer to the account given by Phelps who says (Traumatic Injuries of the Brain and its Membranes, p. 129, etc.):

"An examination in detail of the many cases in which laceration has occurred in different regions of the brain, affords some reason to believe that

purely intellectual and emotional disorders can be directly connected with the localization of the injury in a part even more restricted than might be supposed from the results of physiological experiment." He refers to the left frontal lobe. He can use 28 out of 225 cases.

The lesions of the *right frontal lobe* (7 cases) gave in one case violent delirium on the second day, in two convulsions followed by unconsciousness and delirium, in one meningitis. In one a previous melancholia continued. In two no mental symptoms.

While in the seven cases mentioned "positive direct mental symptoms" were observed in "none" (a summing up difficult to understand), the lesions of the *left frontal lobe* were all accompanied by some mental aberration or deficiency apart from the stupor, and in ten cases with lesions of both frontal lobes, eight showed specific mental disturbance.

Phelps (p. 135) even distinguishes subcortical and cortical effects; the former "abrogation of mental power, rather than aberration in its manifestations, the patient's condition being sluggish and apathetic. In the cortical lacerations, in place of apparent defaults of intelligence there were perverted memory, lack of attention and control, incoherence, delusions, or the stupor which comes from confusion rather than paucity of ideas; the mind was alert to external impressions, though they were not always rightly comprehended. These distinctions which are general are by no means absolute." . . .

"The converse proposition that laceration of the left frontal lobe is the sole traumatic lesion which occasions a direct loss of or derangement of intellectual function, is, so far as can be judged from a study of the same series of cases, only a little less absolutely true. In the 225 autopsies, death had been preceded by such deficiency or derangement in four instances in which this injury was not disclosed." In one a hysterical melancholia preceded the injury of the parietal lobe. "In each of the other three, mental decadence was evident; in two, general hyperæmia and œdema were excessive, and in the third a large localized subarachnoid serous effusion compressed the frontal lobes." "There were no instances in which a laceration of any other cerebral region was attended by characteristic mental changes."

Further, of 110 pistol-shot wounds collected by Phelps from English and American literature, 58 involved the frontal lobes, 26 the right, 24 the left, and 8 both. Not one of the 26 cases of injury to the right frontal lobe showed any symptom of mental or emotional disturbance which is characteristic of general confusion. In eight of the thirty-two cases involving the left lobe, the condition was obscured; several other histories were defective; some cases showed aphasia (mostly with injury in the posterior part). In some cases no mental impairment followed. Details of the positive cases are not offered.

From 130 cases of wound of the frontal lobes, Phelps concluded that the right frontal lobe gives no mental reaction as such, whereas in nearly every instance in which consciousness was retained or regained and the mental

faculties were not perverted by general delirium, laceration involving the left lobe was attended by default of intellectual control, and that the lesion was usually of the anterior region and implicated its inferior surface. Subcortical disintegration leads rather to defect symptoms, superficial laceration to aberration. This argument is worth being tested further.

The material furnished is hardly quite convincing yet.

Probably the best examined case of traumatic mental defect is that of Voit (see page 435), concerning whose aphasia there is quite a literature available. In this case there was, however, no real delirium or insanity, and the patient was studied clinically only. Cases like the famous *crow-bar case* have been used for a demonstration of a connection between changes of character and lesions of the frontal lobe. It is difficult to say with how much justification.

THE CLINICAL VARIETIES OF TRAUMATIC INSANITY.

The *immediate result of a cranial injury* is usually that the person is more or less completely stunned, or at least dazed. At times the coma sets in after a brief latent interval, especially in meningeal hemorrhage, or after several days, as in Bollinger's Spätafoplexie (Festschrift f. Virchow, Vol. II, p. 150). The awakening from the coma may then lead through a brief period of partial consciousness or actual delirium. In but few cases the active delirious traits exceed mere sopor, i. e., a dreamy condition from which the patient can be aroused only for a few moments, with difficulty of grasp on the situation. In the cases extending over several weeks or more, and showing plain traits of mental derangement, we recognize clinically the cases of *primary traumatic insanity*.^{*} Among these we are able to distinguish partly febrile affections from other more directly psychic disorders.

Case 10. A case of partly febrile traumatic delirium was admitted from the Worcester City Hospital. A young woman of doubtful habits had shot herself in the right temple, October 6, 1898. She did not lose consciousness, directed a note to her lover, and was taken to the City Hospital. Under ether the bullet was probed for. When she awoke she was delirious and remained so until October 27. The temperature was 101° during

^{*}Leaving to the medico-legal field the distinction raised by Dr. Pearce Bailey when he called such a case "one of protracted delirium rather than insanity."

the first three days, then normal with an occasional evening rise to 100°. The patient was "noisy, disturbed all the patients, was restless, attempted suicide twice, and required restraint." On admission, October 21, the patient's temperature was 102°; it was normal again October 23. The right eye was slightly protruding and showed chemosis, rupture of the retina ("Choroiditis hemorrhagica"); paralysis of the muscles of the eye (especially for horizontal movement), and of the right frontal muscle. Cystitis. Mild delirium. The patient appeared bright, but was really much confused. When she would awake she would believe herself at home, or at the city hospital, and only recognize the place when looking down to the lake (which she knew well). She greeted the physicians, apologized that there were not enough chairs, called the nurse to bring some. She repeated the names of the physicians correctly, but in a few minutes she substituted other names. She gave an account of having had headache, especially over the right side of the forehead and extending back towards the mastoid prominence. "I felt as though the brain was chopped into little pieces." She realized the blindness of the right eye while it was examined, but otherwise did not think of it in her confusion. She interspersed irrelevant remarks in her account and elaborated on them. Thus she said: She went to the city hospital for an apple and enlarged on the story without being interrupted by casual remarks she made. Then she added, she must have been crazy to have gone to the city hospital for an apple. Since being at the city hospital she could not get certain events out of her head, every morning on awakening she believed she was standing under the elm tree in Salem Square; or she felt that the garret of her home was cut up into little rooms like the one she was in. She remembers entire dream-episodes and tells them very vividly. "I remember being in a hack and going somewhere, out to Westboro. You know where W. is, don't you? I thought that I was with Dr. —. You know I just stretched right out and put my feet on the other seat and leaned on his shoulder. I took one hand and put it around me like this and the other like this; then I looked up into his face and kissed him, oh, lots of times and said, you are a dear good fellow, you are so sweet that I should think all of the girls would fall in love with you. Then, you know, he said 'Well, that is their privilege.' 'Well, you will love me, won't you?' 'Seeing that you are an invalid and I am a doctor, I guess there will be no objection,' he said. You know, I saw a bottle of wine on the other seat, so high and the neck so long, and I said: 'What's that?' He said 'a bottle of wine.' I said 'let's open it'; but he said: 'no, we might get too jolly.' Any way he did not open it. Well, we went out to Westboro and there I got all mixed up and I then lost him; so I borrowed a bicycle and rode home."

The patient was restless and tried to get out of bed; but within three or four days she became quite rational, but kept a defective memory of the three weeks of delirium. Since then she has had several episodes of constitutional depression with one re-admission.

Summary.—A delirium after a shot in the right temple, with restlessness,

dreamy fabrications, difficulty of orientation and in remembering names, with a few subfebrile rises of temperature. Recovery in three weeks.

The following two cases are *free from febrile complications, but similarly marked with hazy grasp on the situation, prevalence of dreamy productiveness and tendency to fabrications.*

Case 11. W. J. D. Of American parentage; inspector; single. Born 1868 or 1872, with negative personal history, beyond a scar on the penis concerning which no reliable facts were obtained.

November 23, 1898, the patient was supposed to have fallen from a passenger train, he was found beside the track, and admitted to the city hospital, with scalp injuries but no injury to the skull. With the exception of a very few lucid intervals he was restless, irresponsible in words and actions, but easily managed until December 2, when he became violent, threatened, struck the nurses, etc.

On admission December 3, 1898, he was restless, squirming in bed, hunting for something, he does not know what, among the bed clothes, hazy and fabricating. He says he is in the "Jacksonville hospital"—"the surgeon just came in"—"Oh, I just came from Tampa." He feels "kind of mixed up"; did not remember where he was in the morning (city hospital), made incoherent remarks about the treatment the doctors are giving him and what to bathe his head with; he claimed he received his wounds in battle, that they were "sabre cuts." The left shoulder had a large bruise, the forehead a lineal cut 4 inches long, sutured, a large gaping wound in the parieto-occipital region with swollen margins and dirty; it is disinfected and dressed; pupils dilated, the left perhaps slightly larger; tongue median; countenance flushed; slight weakness of the left orbicularis, facial, arm and leg muscles, increased reflexes (the left knee-jerk slightly more than the right); left plantar reflex absent, the right slight; traumatic difficulty of motion of the right arm; the patient was restrained. December 4, he again admitted he was all mixed up, points to the head and says: "If a little alcohol dipped in glue were only put there (referring to wound), it would cool it off and be better. Can't you pry that open and let that weight off my head." Then he again talked of Tampa, Jacksonville, gave the address of a relative, yelled and called after the physicians, whistling for them to return, but merely rambled: "What kind of a progress do you get out of that." Out of what? "Oh, outdoors." "I came here some time ago, oh, five weeks ago; I came in through the entrance above, I came from Brockton." What place is this? "Now you have got me mixed up on that." Later said Worcester. "I was building a road there, a street railroad; I came here Thanksgiving day. I went to a hospital in Brockton after I was married." (The patient is single.) How did you get here? "I traveled around by a fast mail express." Has anybody been here to see you? "One man came here to see me, Mr. O—, Superintendent of the Brockton Street railroad." When did you come here—what did they do to you first? "The Morton Society came to see me, they wanted to treat

me. This building is a State Society for treatment of ailments." December 6, he said it was *November 19*; he had been shown the calender in the morning and then forgotten the date. He gives an account of two attacks—gonorrhoea and chancre three years ago which broke out on the shin four months later.

The patient's gait is odd, the feet are wide apart as if with an effort to keep the head still. He cannot raise the left leg as well as the right.

December 10, the patient claims he is in Worcester, the proprietor of this institution told him, it is supposed to be a hotel—"I don't know whether you would exactly call it a hotel. Well, according to conditions it is run by hospital people, it is owned and operated under hospital conditions." He knows that it is December. The day? "I'll be damned if I do. Let me see, to-day must be about Wednesday, if I came here on Saturday this must be Wednesday. The clerk told me I came on Saturday." He thinks he is getting nearer his senses than he was for a while—"my head was hurt so bad that it was enough to put me out of my head." He could hardly believe that he had been here a week. His memory poor for what he had for dinner, fair concerning the examination he had gone through. He *fabricates* that he went upstairs to the doctor's office in the afternoon, but slept in the forenoon. At one time he remembered that the doctor had an assistant, but then again said when asked who he thought the physician was,—“Upon close inquiry I would imagine you are a representative of the company” (for which he worked). He says he got hurt. Where? “Well here, no, well in Boston.” What place is this? “Webster. I got all mixed up but I know what I did last.” Memory for remote events is probably good.

December 14, patient talks coherently, acts rationally, knew where he got hurt;—he was standing on the lower step of a moving train, people were standing on the higher steps, and he was either pushed off or fell off; he had been drinking a little that night at six, the accident happened at eight. He claimed to have come to his senses December 10. December 17, the right knee-jerk and right elbow-reflex seemed slightly increased, the reflexes on the left were normal. There was considerable coarse tremor of the left hand; no Romberg, writing or reading defect; no speech defect; no hemianopsia; the right pupil a little larger than the left; the gait a trifle clumsy; mental condition quiet and composed.

In the night of December 19, he awoke about 12:30, left the bed; it seemed to him as though he and the night-watch were playing school games. “Why I was to represent a character that had hand-cuffs on, and there were two girls, a white and a black girl who were there, etc.”; a moment later he claimed he had said nothing about school games. He was born in 1871—married at 23 years in 1885, four years ago, but this is 1898, etc. Again on December 21, he states he was born in 1871; 28 years old—no 27; married at 23 in 1885—“85 and 4 are 89.” His wife's name is Eliza; her maiden name T. She lives in St. Louis. December 23, with his usual easy self-confidence and deliberate glibness gives an account of the scar on

the penis—an uncle of his, a fireman, had gone to fires with him as a boy; he saw him slide down telegraph poles, and one day he tried it for practice, ran a sliver in which gave him a lot of trouble before it got well. He told his father that he had told the doctors he was married because he was so mad over being kept here and he wanted to fool them. Asked half an hour later, he again said he was born in 1871; married at 23, 1885; the wife lived in St. Louis—"I told you her first name was Eliza; it's Alam, Alam Tinsley." By whom married? "By a traveling doctor (pause)—no a traveling minister I mean," and he gives a long account of his wife with whom he boarded before marriage, her parents, etc. When he was told of his statement concerning the fooling of the doctors, he calmly denied it, and said "it doesn't make any difference."

Summary.—Fall from a train. Large bruise on the left shoulder, large cuts on forehead and occipito-parietal region; no obvious fracture of the skull; (variable) differences of tendon reflexes and of pupils, clumsy gait, delirium with profuse fabrications, but temporary partial grasp on the situation for three weeks. Subsequently tendency to prevarications and inconsistencies. Total duration of the abnormal mental state two months. The patient took months to recover from difficulty of remembering things and from headaches and dizzy spells. He has been quite well since January, 1901, when a tumor was removed from the left temple developed around a splinter of bone.

Case 12. S. J., alias C. S. A very hazy previous history; probably born 1862. Married and separated; disinclined to give any correct previous record; claims he was disowned by his family. The lady with whom he boarded five weeks describes him as a very strange man, talking continually against women, against his father and mother, who whipped him and drove him from home. He claimed to come from England. Spoke of being married three times. He did not drink during that period. His wife, Mrs. C. S., said that she married him February 25, 1893; he worked then at painting; her husband sent her home two months later; he suddenly appeared March 1, 1894, claimed the baby three months old, and she did not hear of him until she was informed of the accident. She knew of no previous marriage, she never saw him drunk, but he was very nervous, and acted as if hunted; he changed his places very often. The wife saw the patient to identify him but not to speak to him.

The patient was admitted to the Worcester City Hospital, October 8, 1897, with a scalp wound, having fallen from a train and struck his head on the rail; profuse hemorrhage from the right ear continued 48 hours; semi-conscious condition followed by a state in which he answered questions irrationally. He urged to go home, tried to escape, and was committed to the Worcester Insane Hospital, where he was confined to the bed and restrained because he tried to pull the bed to pieces, wandered out into the ward saying his home was right across the way; he appeared completely disoriented and irrelevant, was very voluble in conversation and showed a slight exhilaration and tendency to be glib; extreme inconsistency. He

listens attentively and if he doesn't understand the question he will ask to have it repeated; then he answers as if it were perfectly correct, but wanders off to a totally different subject. He appeared quiet. The following conversation is a good instance:

What is your name? "Charles McGaverick." What was it before? "The same as it is now." What is it now? "Johnnie McGaverick." What is your father's name? "His is not the same as mine, he calls his the same M-o-v-e-r-i-c-McGaverick." How old are you? "Most 38." How old were you a year ago? "Just the same, I want called the same." What? "No, I don't think there was then. It was too far ago. Because I was away too long." What? "It was a long time before that." What? "They would call me McHolden, they call it." What is your name now? "McHolden." What? "I can't think myself, I didn't work for him myself, but I guess Mike is different now to what he was. I think he has got another place." What did you say? "This Millen I spoke of, I think his name is now changed to McMahon." Did you ever drink? "No, I have not drunk for years, no I never drank." What did you drink? "Beer, ale and such stuff but it is a good while since I had any at all." "Say will you take this ticket home, if you can give him that from me to take me home I will pay you for it. I came here on your strength, of course. Won't that do? I'll send you my certificates as it might be called all right." Did you ever go with any women? "I never had any." Why? "Because I never had any what I say is right, is right, as far as I am concerned." "Well, will I get yours when I go down? What ever you say I will bring it to you and bring it all right. Well, when that comes back you are paid all right." How did you hurt your head? "Oh—that was done by the railroad." How? "Because the road got it in that way. The railroad did it by doing it that way or in other words that is to say by working." How old are you? "About 47." How did you hurt your head? "Oh, that was done over bad-looking women. As soon as ever I get loose at all, it was done by women. All to be different." How did you hurt your head? "Well, all about the same. Why it got bruised. It might have been to-day and to-morrow, the same things." What town are you in? "In Fitchburg and Worcester road. It is on the road that runs from Ayer Junction to Ayer Junction and all the way down there." What town are you in now? "This is Northampton ain't it? O, I thought it was." Have you any headache? "It must be six miles of north the headache." Do you ever see anybody in your room at night? "I can't tell, till I go out at night and then I might tell. Who orders that list made out?" He now commenced to fumble around his shirt and said he was looking to see if the money was there—"No, by Judas there ain't any that I can see." What did you want money for? "I wanted to know where it is. If I had the money so that I could put it down, I should know what to do with it." "Can I come? Can I come here or to the office." What is your name? "Well, its my name." What is it? "Well, it is not much." What? "If you want to pay for it, I will be different."

What is your name? "I asked you if you would let me buy my name off"—and so on in a most disconnected, rambling way, at the same time with a plausible and affable air.

He has a scar on the right side of the head over which he placed his hand several times gently. He twice stated that it was done by a railroad train, at another time he "fell from a roof," and still again that it was caused by "bad-looking women." Absolutely no insight. "I am all right only I want to go home." Cannot remember when he came here, where he has been and "just forgets" his age.

He admits his head is not right. Up to November 12, his speech was nasal and had a sing-song character. By November 13, he began to show orientation and much improvement in memory for recent events, but he maintained a great tendency to fabricate. He was never at a loss for well-chosen words to cover up his ignorance. He seemed to be unable to remember a name for even a minute. On November 13, he said "I want to ask your forgiveness for what I said the other day. The men around me said I said something wrong to you. I am sorry as I do not want to do anything wrong" (his voice trembled). What was it? "I don't just know, but if I did I am sorry. My head was wrong, it felt mixed here" (pointing to forehead). Though he had often asked to go to his father, when asked now, he said—"No, I have found out since I have been thinking that I don't belong to him; I have not been with him for many years,—he needn't come unless he wants to, I don't think he will come here." He gives an account of his admission November 17, with ease fabricating about the men who brought him, the time and the place. "The two men came with me and went to bed near me; the next morning the two men got up and went off and I have not seen them since. I came in the hospital and sat down on a settee, until about 10 o'clock P. M., when we went to bed," etc. Even on November 22, he dodged the questions about orientation; repeats the question or some catch-word, and with a rising inflection on the last word says, "well *now* I don't just know sir, it seems quite a good kind of place—why—yes sir, it is 1897 I guess." What place is this? "Yes, sir; well I don't know only what I have been told; they say Worcester is somewhere near here," etc.

From January, he was completely oriented and with perfect memory of the remote past, with amnesia for the events since the accident and still with a tendency to make up the gaps with much fabrication. From February 2, he was perfectly clear, but showed a tendency to conceal, told the physician he considered his past none of his business, but gave an account pretending to make a clean breast of the whole matter. Statements casually made during the psychosis and known to be true are positively denied by him, unless he knows that we have obtained the facts.

He escaped February 14, but returned February 18, on the advice of his employers, and was discharged May 23, 1898, with perfect insight and able to resume his work.

Physically he had shown a small scab on the right parietal eminence,

which healed and was no longer painful. Defective hearing on the right; brisk reflexes; weakness in flexors and extensors of the left wrist. A transitory peculiarly limited anaesthesia in the left metatarsal region, difficulty of rotating the foot and slight exaggeration of the left Achilles reflex was noticed in January, but disappeared in a few days.

September 16, 1898, the patient again fell from a car and sustained a fatal injury.

The autopsy showed infiltration of the scalp with blood over the right parietal bone. A large hemorrhage under the dura on the left side. Hemorrhagic softening of the under surface of the left frontal and the right temporo-sphenoidal lobe; the middle fossa filled with blood; hemorrhage in the pia over the under surface of the left cerebellar hemisphere. A large irregular fracture of the base. The vestiges of the first injury covered up.

Summary.—Constitutional peculiarity. Fracture of the base; coma of 48 hours, then delirium, attempts to escape; commitment. Delirium with disorientation for five weeks, with peculiarly inconsistent fabrications and a condition reminding one of Ganser's symptom-complex; the latter continued for two months. Amnesia for the period. Recovery. Death from a second fracture one year later.

The next case, a young alcoholic, after a blow on the head which dazed him, for two months was in a state of *haziness with tendency to fabrications*. He showed a *very poor grasp on facts* ("stripes of flag up and down and stars in the middle"), *very variable and contradictory statements of time, poor calculation, marked amnesia* for the last few weeks and *free fabrications* to fill the gaps. Great improvement after four months.

Case 13. T. J. H. Family history, negative. Patient was a poor scholar, but later a good worker in the sewer department of the city, fond of company. Drinking for the past 8 or 9 years. Two months before commitment, at the age of 25, the patient drank excessively. He received a blow on the head while riding on the top of a car. He was much dazed but returned to Worcester with the help of two men who left him at his home. He stayed in bed, weak, disoriented (his home—"a boarding house"). He took a lamp to look for whiskey in the room, claimed his brother had a game rooster. There is no excitement, no evidence of hallucinations, but a great indifference and tendency to fabrication.

On admission he gave a fair account of his craving for rum, no horrors, but weakness and slight nervousness, the head "a little mite mixed up," the date (July 24, 1902), is 1893. He is somewhat restless, begging for release. At 9 A. M. he says it is afternoon. He has had "two meals," and he makes up "what he had"; "I was in here twice to-day and day before yesterday; this afternoon I came but I was in here this morning." He claims his former chum slept with him a few nights ago. He said he was 28 years old.

The patient complains of occasional frontal headaches, cannot differentiate odors on the right; reflexes exaggerated; slight ankle clonus; considerable tremor, and slight incoordination, slight defect of speech and writing. His memory is fair (for three numbers repeated in 10, 15, 20 and 30 seconds), but easily disconcerted. *Memory pictures* hazy (U. S. flag,—stripes up and down, and stars in the middle).

July 28, in the night he had a nightmare, shouted that some one was after him to kill him. He forgot it the next morning. A careful mental test showed: A very poor grasp on facts, very variable and contradictory statements of time, ages of friends, his own age (23-28), calculation very poor; marked amnesia for the last three weeks and rich fabrication to fill the gaps: "I have been out there and down to the city, etc." He began to do some work in the ward. The memory was variable, better for more remote happenings. There is some insight; he begins to correct mistakes August 7, to remember the name of the physician August 11; claims he is better. Gradual improvement in two months. (But he still said *Artillery brigade* on discharge.)

The large number of cases of traumatic coma show but little immediate mental disorder except what can be accounted for by fever, alcoholism, and the inevitable haziness in the transition from coma to connected thought. Bailey (Med. News, 1903), finds that 58 per cent of the cases with fracture of the base die in the coma or the delirium following it, or, perhaps after a lucid interval, from meningitis. Among his cases only one old gentleman showed a "protracted traumatic delirium," lasting several months, with impulsive tendencies and fabrications. Even in the cases of brief transition states, he gives the warning to be prepared for *sudden impulses*, such as to get out of bed, to rush out of the room, even in patients who are fairly clear most of the time.

Guder gives several types of what we here called *primary traumatic insanity*, in a table of 45 cases.

1. The typically delirious forms which accompany meningitis.
2. The delirium which forms the solution of the somnolence and which Bailey refers to. Wille saw in three of these cases states of hallucinatory excitement with violent response which pass away and leave a period of headache and various disorders of innervation. There usually is permanent defect of memory.
3. States of stupor in which the patient awakens from the coma dazed, with weak memory, irritability, irascibility, insomnia or somnolence, intolerance for alcohol, dizziness and head-

ache, states of anxious agitation and depression, subjective auditory and visual sensations, and motor disorders. Dullness is especially characteristic.

On this ground he found simple depressive and stuporous states, and more frequently states of hallucinatory anxiety, marked disorder of the sensorium, or hallucinatory stuporous dullness with impulsive acts, which make the patients dangerous to others and to themselves (16 cases). Huguenin saw "chronic agitated melancholias" with recovery. "Maniacal" types are usually hallucinatory delirious and range between confusion and more clearly delusional states. Memory defect is specially noted in 13 cases; a tendency to roaming and to excesses in 8; most of the cases ended in dementia, 5 cases showed recovery with subsequent relapses and even a transition into periodic and circular conditions.

From these states which develop largely on a mechanical basis (with dullness and memory defect), Guder distinguishes others due much more to the fright—great excitement or dull brooding anxiety, depression, irascibility, or hysteria or epilepsy, usually on hereditary basis, cases in which the trauma is of no more importance than any accidental cause (menses, puberty or insults). It is perfectly obvious that the prognosis of such transition cases depends mainly on the fundamental disposition. Concerning the rôle of the trauma we shall speak later. The instances Guder mentions show the triviality of the blows as compared with the annoyance they created.

The types presented by our cases of primary traumatic insanity showed, beside an absence of manic-depressive symptoms, a *certain tendency to dream-states, fabrications of whole situations and great inconsistency of statement*, but no hallucinosis. They were all committed owing to *impulses and restlessness*. One of the three cases showed some after-effects until a bone-splinter was removed; one recovered, but was killed by another fall a year later, and another has since shown periodic depressions which cannot be laid to the trauma.

We now pass to a group of cases who apparently make a good recovery from the surgical point of view but *who suffer from after-effects*. In our analysis, we restrict ourselves largely to the symptoms of a subjective and mental character, referring to

the records for the purely neurological symptoms which Dr. Bailey has thoroughly discussed in his article (Medical News, 1903).

Concerning the *general after-effects*, there is little to be added to what M. Köppen says (Arch. f. Psychiatrie, Vol. 33): "Men who have suffered from a cranial lesion in which there has been a severe damage of the brain, with or without an injury to the cranial bones, on their recovery from the immediate results complain especially of all kinds of sensations in the head, which they describe either as pain or as pressure with feeling of crawling or of dullness of the head, more or less definitely located at the point where they were hit. They frequently become dizzy, and at times even faint for a short time without any epileptic attack. Although slight attacks of dizziness may recur frequently, epilepsy with typical attacks need not develop. There is further in our patients a great irritability and nervousity. The formerly good-natured or even-tempered persons become irascible, hard to get along with; formerly conscientious fathers cease to care for their family. The irritability at times increases to excessive violence in which actions occur of which they have no remembrance; the nervous system is not only under the influence of psychic irritation but especially susceptible to the influence of alcohol or tobacco, in even small quantities.

The working capacity of our patients is very poor. It suffers variously, although such individuals often give an impression of perfect capacity; and since the morbid symptoms are essentially subjective, they always arouse doubts whether they could not do something at least, even if they are unable to work in a noisy shop or on a high scaffolding. It is, however, certain that the patients are very forgetful; in giving orders or doing errands they make the most incredible blunders; frequently everything must be written down. Their capacity for thought has suffered, as is sometimes shown especially in the great slowness of thought. These patients are unable to concentrate their attention, even in occupations which serve for mere entertainment, such as reading or playing cards. They like best to brood un-

* We would rather say are apt to complain, because, obviously, quite a few cases recover without any trace.

occupied; even conversation is rather obnoxious. This point is so characteristic that it gives a certain means of distinction from simulation, which as a rule does not interfere with taking part in the conversations and pleasures of the ward and playing at cards which means as a rule too much of an effort for the brain of actual sufferers. The patients are usually advised to take light physical work, but even there they are perfectly useless. Excessive sensitiveness of their head obliges them to avoid all work which is connected with sudden jerks, bending over is especially troublesome; and there is hardly any physical work in which this can be avoided; the blood rushes to the head, headache increases, dizziness sets in and the work stops. Patients feel best when in the open air inactive and undisturbed. There are but few objective signs, such as increase of pulse, flushing of the face, dermatographia, trembling and uncertainty in the Romberg position, such as is shown in all general nervousity. But the complaints are so exceedingly uniform that this uniformity of the subjective complaints justifies the conclusion that they are well founded."

The picture thus is briefly that of a mental weakness shown by *easy fatigue, slowness of thought, inability to keep impressions, irritability, and a great number of unpleasant sensations, above all headaches and dizziness.*

An exaggerated transitory condition of this sort seems to have been present in E. F., with the typical after-effects of trauma; a few local nervous symptoms, tinnitus, swimming sensation, pain, confusion, irritability, impulses, hazy remembrance, defective calculation.

Case 14. E. F. Family history, negative. Patient born in North Carolina, 1883; was a twin; worked as a waiter; was bright and pleasant and happy, a good worker without any pernicious habits.

September 21, 1901, the patient was struck by a car and taken to the Mass. Gen. Hospital unconscious, bleeding from nose and ears; he remained unconscious one week. Two weeks later he was taken home. At the Mass. Gen. Hospital he showed no focal symptoms. Vomited twice September 22. Bleeding from the ears stopped on the fifth day; the pulse was full and strong. September 24, restlessness was marked. The patient was drowsy, had considerable ecchymosis behind the left mastoid. Complained of feeling bad and of headache. *A slight left facial paralysis* is mentioned October 2.

On his return home he seemed somewhat confused, unable to carry on any connected conversation, had bad dreams in the night. He became very irritable and cross with the children, easily angered. He even struck his sister several times, and afterwards expressed great remorse—"he didn't know why he did it, it must have been the devil in him." Said he had peculiar feelings come over him and he couldn't help it.

June 27, 1902, he was committed. He told the physicians he heard roaring in his ears, objects appeared multiplied before him, one man looked like six, at times he gets a crazy feeling with anger and impulses.

On admission he was quiet and orderly, with full insight. He complains of being unable to remember distinctly, does not know the time correctly. On the second day he complained that he could not remember the name of the hospital. He is anxious to help but at times complains of roaring and swimming sensations in the head, and of pain over the left parietal region; memory appears much better than the patient intimates subjectively. Calculation is very defective (partly due to deficient education). Writing and reading fair.

Physically he shows pterygium of the right eye, no hemianopsia; probable diplopia on extreme fixation towards the left or right (one man looks like two men on the side, especially to the left and outward). Slight impairment of hearing on the left; impairment of smell; reflexes equal, brisk; no ankle clonus, slight tremor of tongue; very slight incoordination in the feet and hand movements. Some mispronouncing of test sentences (ignorance). Pulse 70, slightly irregular at times. Soft systolic murmur at the apex, no enlargement of the dullness. *Amnesia* from the time of getting on the car to the time when taken home from the Mass. Gen. Hospital.

The patient improved rapidly; the attacks of roaring and swimming became rare, limited to the left ear and diplopia disappeared; irritability did not recur; self-confidence returned, and the patient was discharged well, November 22, 1902.

We shall now review the cases which developed more or less as *secondary traumatic insanity*.

A special position might be given the *cases of injury during infancy*, since in them, there is apt to be a developmental disorder in addition to the constitutional element. Among Dr. Bailey's cases, I, IV, and XIII (children) developed irritability, oddity and irresponsibility; one boy especially in hot weather. In one of my cases (*Case 15*), the patient when six months old was dropped by the mother when she entered a train and the result was an infantile hemiplegia with occasional epileptic attacks, irritability and deficient mental development.

The following case is an instance of the not infrequent accounts of traumatic etiology of manic-depressive insanity, not very conclusive since an uncle had been insane.

Case 16. L. G. J. The patient's uncle had been at the Hartford Retreat twice. The patient was born 1823, of Presbyterian parents in Connecticut. One hour after birth a brother two years old pierced the anterior fontanelle and some brain substance escaped; brain fever followed and ended in complete recovery. After working in a silk factory, the patient married at 23; in good health, pleasant and sociable, and without any peculiarities. She had four children, and, after the birth of the first one, abscess of the breast. A few years later, after some trouble with an Irish servant the patient became sleepless; morphine made her worse; she became "raving and delirious," thought every one was against her, spoke of poison, thought the Irish girl was the devil. She knew her husband and talked sensibly at times. In a week she improved and the attack lasted one month. A year later she again had insomnia and an attack of excitement lasting a month; all the people against her (no ideas of poisoning); religious ideas were in the foreground; exhilaration and depressed periods occurred, but of late years they became a little longer. In the intervals she was quite well and during the attacks could be cared for at home. The attack which began October 1, 1901, led to commitment and was typically manic-depressive. No deterioration. No fits. No special exciting causes.

Guder (*Die Geistesstörungen nach Kopfverletzungen*; Jena, 1886), deals extensively with these cases (pp. 5-14). To judge from the casuistics which he offers, we meet with very much the same variety of consequences in later ages; but with modifications determined by the state of growth; imbecility, change of character, epileptiform psychoses, catatonic deterioration (Schüller's case 42), circular insanity, in some instances with more or less somatic symptoms referable to the trauma or its consequences.

Of adults, we have a long series of cases. We begin with those in whom, without much permanent harm the *susceptibility to febrile disorders* is very plain.

Case 17. O. D. H. Family history, very marked: Patient's grandfather alcoholic, died with alcoholico-senile dementia. An uncle and one brother insane; a cousin had chorea; the mother immoral. The patient was born 1857, of a Mass. Unitarian family; delicate and slender as a boy. He grew up working on a farm; little schooling; no alcoholism. Married, one child. At the age of 22, the patient was knocked against a freight car by a piece of lumber so that he hit on the right mastoid and was hit on the left fronto-parietal region. He fell unconscious but soon was able to walk into the station. Diagnosis of *fracture of the skull*, left facial paralysis, sudden deafness of the left ear, bleeding from both ears, nose and mouth, lasting a day; internal strabismus with diplopia probably lasting six months. No headache, vomiting, difficulty of mastication, dimness of vision, diffi-

culty with bowels, and bladder, or difficulty in swallowing. In about a year he was able to do a full day's work.

At the age of 25 the patient received a blow on the epigastric region, followed a month later by gastro-intestinal disturbance lasting four or five months (vomiting, heartburn, eructations, alternating constipation and diarrhoea). It is probable that during this period he had some *abnormal experiences*: When he shut his eyes, the heavens would light up; there would be flashes of lightning; they would go up from the stomach; they would wake him up; they would seem to go through the eyes. When the flashes were not very dazzling, he thought he saw men and women in the room. Once it seemed to him as though he had been shot through the heart (he did not feel it but heard the shot and a remark by somebody); then it was as if his mother came into the room, pulled off the sheet and someone said: "It's only a blank shot." He is not sure whether it was a nightmare; but claims this kind of attack would come on from time to time; he seemed to see his mother with him, and the face of a ruffian saying "that's enough, that's enough." Such spells accompanied attacks later, but became rare. The patient made this statement during his convalescence at the hospital, and denied it later altogether and said he could not remember speaking of it. It must be taken with some caution.

The attack for which he was admitted to the Worcester Insane Hospital on March 24, 1897 (40 years old) began on March 3, with *laryngitis*, *fever*, and disturbed sleep and nocturnal sweats. This lasted about 10-14 days during which time he worked (as shirt-cutter). He took a purgative which acted excessively and weakened him, and March 18, he went home. His wife noticed that he would not answer at times when spoken to. The patient says in his *dreams* he would have a vision of a person whom he respects a great deal (he does not want to say who); there also seemed to be people who wanted to kill him and one person who seemed to be always with him and whose bidding he must do. When out walking he would sometimes hear some one call his name; he did not know exactly from where. He thought a ruffian pursued him. He felt terribly nervous. Early in his sickness he dreamt of seeing an intimate female friend dead 12 years; when he awoke he thought of it and it seemed singular to him; it did not worry him and he did not think much of it; two or three days later when at work the idea came to him that she was very sick and wanted to see him; the way he came to think of it was that in his dream he saw a letter from her which read: "I'm coming back to you." When the idea struck him he acted on it without delay or prolonged consideration, and sent a telegram to his stepmother asking whether the lady was ill and if she wanted to see him. After sending it, he thought it over and realized how foolish it was, and that she was dead, etc. Then he realized that he "was a sicker man" than he thought and sent the second telegram to his stepfather either the next evening or perhaps that same evening. He does not know why he signed his stepfather's nephew's name Arthur to it; it seemed to him as though he felt afraid and had a feeling that somehow it would be

safer not to sign his own name. At any rate from about that time he began to be afraid for himself, his wife and child. At times, however, he thought how strange it was that he should feel so. At night he would take his child in his arms and would want his wife close by him, as it seemed to him that unless he looked out for her something would happen to her, also thought that this night might be his last on earth; had a great indefinite fear, of no one in particular and of no particular danger. The stepfather persuaded him to go with him to A., but while on the car going there, the patient said, "Do you see that man (pointing to another passenger), well, he is trying to get my money, I have \$100 with which to pay my interest, etc., and he is trying to get it." He refused at first to get into the carriage to go from the train to the house, saying that something was going to be done with him, but finally went. A few days later he jumped from the 2nd story window, ran up the street and when overtaken said: "Well, we will see if the whole town is going to shoot me," then to his pursuers who had overtaken him: "Now is there going to be any trouble? go ahead and have it out, we will settle this business right here." He was easily pacified and taken back to the house. Just before admittance he had the idea that either he, his wife or his child must be sacrificed; and suddenly snatched up the child and ran out of the house; when he was stopped, he again said: "We will see if the whole town is going to shoot us." Both wife and stepfather say that the patient has worked very hard the past year, worked at home an hour or two both before and after the day's work in the shop, but that he has always retired early.

March 24, 1897—to the committing physician, he said there was a person outside his bedroom door all night, waiting to shoot him; another man was under his bed trying to kill him; some terrible thing will happen to him; that he lived in constant fear of his life; that he knew what this was all about; he would be killed. He walked excitedly about the room; went to the door and would have run out; looked at the windows as if he were trying to make his escape; looked wild and was very much excited. Suspicions of everybody and everything.

Here, it has seemed as though he had done something and would be executed, as though he had eaten something poisonous. His stay of a few hours in S.1 seemed to him as though he were placed with "ruffians of the lowest class in a den of vice and gambling." Said about a Catholic patient who had a crucifix and rosary, that he thought he was probably a man who had power over him. Took the doctors' explanation readily. Said that it was "all right now, that he understood it, but that whenever he saw a man with long peculiar instruments, etc., that he thought he was likely the one who could compel him." At times when he performs insane acts, he knows perfectly what he is doing, remembers it afterwards but does it under "*irresistible compulsions*."

• He talks freely, understands questions perfectly, in general, answers intelligently, not showing marked confusion. Says that his memory is bad, is so during these attacks, that after the attacks it clears to a certain ex-

tent. Throughout the conversation memory seemed markedly impaired, the exact time of any event being unobtainable. Insight is fair. Patient says that he recognizes the hallucinations as such, also the delusions seem not at all fixed and he usually says about both of them—"It seems to me." Sleep during present attack very poor. Appetite also. Manner perhaps a trifle expansive.

March 30, he inquired of the attendant the best way to get out, said he was all right and his mind clear; that he had a family and ought to be at home with them; that he was taken sick March 1, and was troublesome to his folks; that he remembered everything from then, but not who brought him here. Wanted to know if they had to get out papers to send him here.

April 7, he gave a full account with perfect insight.

Physically thoracic kyphosis; prominent abdomen, palate high, narrow; left testicle atrophic from mumps; almost complete deafness of left ear; the left eye closes rather imperfectly except on special effort; the forehead wrinkles on the right side only; the lower facial is stronger on the right; platysma symmetrical; knee-jerks slightly perceptible; pulse 64; transitory feeling of faintness during examination (second pulse-count neglected). Discharged April 27.

Patient was well, did light work on the farm until October, 1897, and then resumed his work as shirt-cutter.

On February 20, 1898, two days after the onset of a severe cold, still at work, but under a physician's care, he said that two men were going to hypnotize him, that the same persons were persecuting him but he refused further information; he was sleepless, and on February 23, when he sat about the house in a manner of abstraction, as if thinking, questions had to be repeated in order to attract his attention and then he would reply as to what the matter was: "Oh, nothing." The next day he appeared brighter, tried to laugh off his fears. Thus for four days until the 28th, he varied daily between a condition of abstraction and depression to one of better spirits, attempting to throw off the fears; the 28th he was much more fearful and silent, at which time he was admitted here.

Here it was noted that he was silent at first, but the following day he was willing to talk, asking to go home and saying that there was no real reason for his coming here. At all times he was a little restless, pacing the ward and frequently changing seats. March 5, his manner at the time of the physical examination still betrayed a little apprehension, as to the way he was examined, not as much in what he said but his manner of saying it. However, he will express no fear. He claims perfect insight into his former condition and says this attack was much lighter. Physically the same findings as the previous year. No further relapse.

Summary.—A patient with marked family history with fracture of the skull at 22, had some peculiar sensations and possible hallucinations after a blow on the abdomen at 25; and at the age of 40 and 41 two peculiar semi-delirious attacks, especially the first with a peculiar fabrication.

A less certain case is that of W. R., according to the family physician, in combination with malaria.

Case 18. W. R. Patient born 1834; blacksmith. A brother died of shock at 70. The two sons are wayward and constitutionally inferior. The patient was born in Ireland and has been 45 years in the U. S. Average development. Emissions before marriage would make the patient feel weak and ashamed to go among people. No masturbation. Marriage at 25; of six children three died as infants. The patient has been an efficient worker in an axe-factory and four years ago retired from a business collecting old iron. Health always perfect. His wife died 1890. He married again in 1892, but his wife left him in a year because she could not get along with the children and the sons persecuted the father for his property.

March 1, 1900, the patient fell on the ice. It made him dizzy, confused, "detached," and it hurt him to chew. It seems that water dripped from the right corner of the mouth and that the right side was a little disabled and twitched so that a physician spoke of a slight shock; he could not speak properly, as it made him nervous and "detached"; he could not write. He remained in this condition until he visited his brother in Milford on March 15, as he wanted to go to the Mass. Gen. Hospital for his head. There he would tell the same thing over and over again, especially the difficulty with his sons. He talked of being apt to imagine at night that he saw them come into the room, or that he heard their voices. He showed no memory defect. Sleep was very deficient. Occasionally he mentioned his fear that his sons might poison him. March 26, he complained much of headache, would not be taken care of by the daughter, ordered her out of the room and wanted to go to the hospital. He had a chill and fever (102°) and explained later that he had diarrhoea and would not want to bother the women in the house. He was, however, rambling, and a physician considered him unfit for a general hospital.

On admission March 26, 1900, he complained of having chills and fever, was rather reserved towards the patients, but bright and affable and even loquacious with the physicians and fearfully tiresome owing to the details. Orientation perfect. Calculation poor; subtraction confused him completely. A careful physical examination showed nothing special beyond accentuation of the second aortic sound.

The patient adapted himself fairly well; but had many requests and finally urgently pressed to get out of the "pauper institution." While at first he had admitted some hallucinations, after March 15, he denied them vigorously.

The patient was discharged April 9, 1900, with a diagnosis of *infectious delirium* (?) on traumatic basis. (According to the family physician with malaria—no plasmodia were found here.)

Summary.—Trauma, slight weakness in the right side, nervous uneasiness, slight confusion and unreasonableness during a febrile episode.

The following is an *atypical disorder resembling dementia præcox*, but ending in recovery, elicited by grippe in a girl with two cranial injuries.

Case 19. E. B. Family history negative. The patient, of Canadian parentage, was born in 1879. She went to school from 5 to 16, and was a normal child. Menstruation, from 15, was normal. The patient worked from 16, until May 1900, in a corset factory, giving satisfaction. She was socially disposed.

At 18 (1897), she had a "peculiar nervous attack lasting about a month." After a wake—she was always afraid of dead people—she came home nervous, did not know any one (she denies this later), and had a terrible pain in the stomach. No further account.

1897, the patient was caught in the shafting and sustained several scalp-wounds and a fracture of the humerus. She was unconscious 48 hours, and confused for 2-3 days, but recovered completely.

1898, she fell when dancing, and was unconscious two hours. For a week things were blurred before her eyes. She did not lose any work however.

April, 1900, she had grippe and had to stop the work. During this attack she became *hypochondriacal* and spoke of pleurisy and consumption and spinal meningitis, had *partial facial paralysis* (from the injury?); she did not sleep well since then, became irritable, unreasonable, complained of headache, numbness of the left side, stomach trouble; at times she was depressed and crying, and again laughing in a silly manner to herself. She became indolent and lazy, talked much of her troubles, spoke of suicide. From June 1, 1900, she had vivid dreams and heard voices at night, which scared her so that she came to her father's room. She was afraid she would go crazy, and wanted to kill herself.

At the hospital she was fairly oriented as to time and persons, but was not well informed as to the locality (probably through misinformation). At night she was restless, frequently got up saying: "I want to go and see him. Where is he?" Another night she screamed and struck another patient and jumped on the floor, in the morning she was abusive to other patients. She gave a good account of how she came and was pleasant during the examination; at other times she cried or said: "I know what you mean; you can't fool me"; "I understand it all."

Physically she showed a linear scar over the occiput. She complains of feeling *sometimes dizzy in the morning*. There is much *epigastric tenderness*. *Right pupil slightly larger than the left; odors better discerned with the right nostril*, but none are named. The *reflexes are exaggerated, probably more on the left*. *The left side of the face is more flabby*, the forehead corrugated equally, but the *left eye not shut with as much force as the right*; tongue median; *subjective feeling of weakness in the left extremities*. No tremor. Roughening of the first mitral sound disappearing on sitting up. Rate 75 and 90 per minute lying and sitting. Appetite poor. Orientation perfect. Good grasp on the situation, but little knowledge of current events (Bryan Vice-President; elections in April or September). Memory not deficient. *Calculation rather poor*. The patient complains that she is *watched, talked about*, referred to in the newspapers and also in songs

and motions of others. Every one is against her; she is *blamed for everything*. "I am an American of French descent; by the 1st it will all come out." What? "Well, the trial will all be over by the first of July." What trial? "Why, either for the state's prison, or take my life away." You will be tried? She nods. What for? "Well, I don't know but what I hear." What do you hear? "That the 1st of July they'll tell the whole story." What?—after repeated urging—"for spreading the news of what goes on here." "There is a girl out there called Pauline—she said it." "I heard they were going to kill me this afternoon." Aural or other hallucinations cannot, however, be established directly. *Many statements are contradictory*. To the attendants she was resistive at first, had to be dressed and undressed; she was inclined to refuse food. No flight of ideas (but ready fabrication?).

Later she admitted having heard her father's voice here. She became more adaptable, gradually gave up her somatic complaints and ideas of persecution, but gave no good account when she left July 11.

Her father wrote September 15, 1900, that her weight has increased from 95 to 113 lbs., that in two weeks she began to work again and had been quite well since.

Summary.—After two cranial injuries, an attack of grippe with hypochondriacal depression, and attitude of persecution with possible hallucinations with confusion of facts of current events. Recovery.

The *susceptibility to alcohol* is plainly shown in the following:

Case 20. T. M. Born 1878. Family history negative. The patient had an average development. From the age of 12 he masturbated frequently for several years, and when he stopped it he had abnormally frequent emissions which made him feel languid and disinclined to exert himself. Especially during the summer of 1899, he was greatly troubled, became thin and pale, and fearful that people would notice it. He changed boarding places. From the age of 17 he worked as a tinner, mostly on roofs. From the age of 19 he has been drunk at times twice a week and then perhaps abstained for several months.

Sunday morning May 24, 1900, the patient was found unconscious by the railroad track. He was taken to the Worcester City Hospital in deep coma, bleeding from nose and ears. The pupils were equal, and reacted; there was no paralysis; the pulse was weak and irregular. The bleeding from the ears continued two days; there was much muscular twitching on the second day and involuntary evacuation. On the 30th of May, the patient began to regain consciousness and control of the sphincters. The 4th of June, the patient was able to sit up and he was discharged well on June 26, 1900. This very summary account is supplemented by the patient as follows: He remembers nothing from half a day preceding the accident to a moment when the doctor was taking his temperature by the rectum. After that he was clear, but at times he was told that for an hour he had talked at random, had kissed his nurse's hand, had got out of his restraint, gone

to the kitchen and eaten lemon peels and everything he could find till he was caught. For these episodes he has complete amnesia, and he only knows that they occurred with exacerbations of headaches, especially on the left side. The hearing was bad, the ears pained and once he pulled a clot from the *left ear* and started renewed bleeding; the right eye pained in the light; he saw double (two ambulances and two men getting off); he had *no taste* for ordinary substances (meat, bread), but could taste vinegar and sugar, when smacking his tongue around. The left side of the face was numb. The mouth was drawn to one side; food was liable to remain in the left cheek; whistling was impossible; the right (?) eye would remain half open. Mastication was possible, but the tongue could be moved but little forward and backward and swallowing led frequently to choking; the left arm from the elbow to the trunk was normal, but the left leg felt cold or burning. He had difficulty to pronounce p and b (up to the month of October), but no aphasia. He *could not sing* up to October and then found that his *barytone* had *changed into a tenor* voice.

According to his own statements he went to work again. In July he had dizzy spells at times and used to sit down and get lost, "a terrible dizzy feeling." Towards October he felt worse; he would drink and fell from a bar-room chair striking the face; ever since then he has had pain. Drinking would affect him for a week or two with "a passionate feeling," and "if I dwell on it at all it seems to discharge and get the best of me." "Just the same as if I had wet dreams, and I have them right along"; "right out itself." "My head would pain me then and since I got hurt my eyes keep twitching."

He was committed because he felt poorly, claimed the doctors did not fix his head right, wants a copper plate riveted to the back of his head to keep the air off his hair. Air bothers him all the time. At times he feels an impulse to take a knife and kill some one.

On admission he was found to be a man 5 ft. 5¾ inches tall, weighing 130 lbs. He complains of headache and dizziness—"I often lie down and do not remember going there."

The pupils are equal, react; there is slight diplopia on looking to the left and upward (see Fig.—), and slight flickering of the right upper lid. The hearing is very defective on the left, less on the right. *Smell* abolished on the left, on the right he says of peppermint and wintergreen—"like fat burning," and of orange—"lemon and orange." *Taste* seems *abolished on the left*, and on the right reacts only way back and very slowly. Cutaneous sensibility normal; occasionally the right leg "gets hot and when I touch it to the left it feels like fire." The left foot is dragged slightly, the left side of the face is slightly less active when the teeth are shown, tongue and hands show tremor; the knee-jerks are considerably exaggerated and show clonus; there is double ankle clonus, stronger on the left; no Babinski. Left hand shows slight incoordination (touching the nose). Writing defective, also spelling; no speech defect. The patient was perfectly oriented, appeared a little anxious and dull and showed a very peculiar reiteration of syllables not of the nature of stammering; a certain uneasiness and haziness, and defective memory.

The following statement, of November 24, gives a number of these characteristics: "My hid, hid, hid, head, the head was not struck right, and I said if it was fixed up with copper I would feel better. I got a pain right here and it aches me all the time. And my head aches all the time, and my head aches all in the morning, all the time" (indicates mastoid). "And I thought if you could get a piece of copper fastened around my neck, soldered, it would be all in there you know. Pain around there all the time, sometimes I see two or three things, and I think if the doctors woo-would-would look at my head, they could fix it. My head, my head pains me all the time when I talk." Can't you breathe through the nose? "Yes. I can't hold me own lips, they are all broke." What is broke? "The face, it can't be kept down, I smoke cigarettes like that with my lips down. I would like to get that done just as soon as I could." What? "Have the head fixed" (indicating with hand). Whence the idea of copper plate "I told one of the doctors and he said tha-that they put a plate in my head and they did it wrong. I thought if I had a larger one way down on my neck it would stop the pain." The patient says he came to Mass. last April, "and I was working around the country trying to elect Mr. Bryan." You got hurt? "I was on board a boat and a train ran into it, there was three of us got saved. I was in a hos-hos-hos-hos-pital." What month? "I was never sick a day day in my—my life until I came to Worcester. I never had had it till I got hurt, the skull was'nt fixed right."

November 26, he did not remember clearly the physician, said "your face looks familiar"—the physician who had examined him for two hours two days before. He complains of having occasional spells of getting dizzy, and lots of worry and imagination such as "all the horses getting bigger or it had a hand." "I imagined I see things about my bed." Nov. 29, he came to me (to the physician) with a tale that the night before while awake he twice saw a man stealing around his bed, and when he jumped up he was gone. November 30, he did not remember having seen the physician the day before. He complains of having vomited in the night, of having been restless. That day the headache disappeared. He became brighter, but slightly surly on trivial cause. His physical condition had improved slightly. December 19, he hears well in both ears, the right hand is still slightly stronger, facial movements are symmetrical, the hands show tremor, especially the left; the knee-jerks are about equal, slightly increased; there is no ankle clonus. He plainly remembers seeing the man stealing around his bed, but no hallucinations of hearing, and he attributes his trouble to a two months' spree before admission.

Summary.—Fracture of the base with slow subdelirious recovery. Under the influence of alcohol, headache, dizziness, emissions, peculiar sensations in the head. Recovery.

Another combination of trauma and alcoholism is that in the following case of traumatic epilepsy:

Case 21. M. H. Born in France, 1844; of average development. Married at 37; two years later, 1883, her husband struck her with a heavy glass tumbler. She was unconscious three hours and recovered at Bellevue. She was discharged with a scar and depressed fracture of the left parietal region. After the death of her husband, 1885, the patient did housework; about 1897, she associated with a drunkard. December, 1898, she had a series of 6-7 fits in 3-4 hours, was stupid three days, another fit about middle of February, 1899; and after an intoxication with wine, a series of six seizures 10 or 15 minutes apart on August 11, 1899. The next day she was confused, repeated names in a low voice, the next day talked gibberish, unintelligibly; she then became restless, went about the house, picked up imaginary things. The physician found her again sitting in bed, mumbling her name. On admission, August 15, the patient was dazed and dull, then restless and noisy; she broke all the dishes on her tray, defiled the bed; August 16, she claimed to be 54 years old, to have been a teacher in France, to have lost a girl 17 years old. She complains of ill treatment at home—"he bothered me and I gave him a good licking" etc.), of headache and backache; that she could not stand up, "the old man hurt my shoulder." "My sickness is in my head." August 17, she began to be oriented, still complained of headache. "Probably the neighbors called a detective because I cried so." "Sometimes I hear and see my father and mother, but they are long dead." The patient is somewhat uneasy, trembles "like a leaf" when writing; but gives an approximately correct account of her history. She begins to say that probably the account of the fights at home was based on imaginations.

The physical examination showed a depressed scar to the left of the bregma, residuals of right hemiplegia (exaggeration of tendon reflexes on the right, double ankle-clonus, a little more on the right side, slight weakness of right lower facial, but greater mimic activity in the right naso-labial fold. Tremor of the right hand, but equal pressure). Deep defect of olfaction on the left, defective hearing on the left; the two or three episodes of spasm are said to have been limited to the right side. Mitral insufficiency. No psychic defect symptoms. Recovery from this episode.

Summary.—Alcoholic excess leading to a series of convulsions sixteen years after a cranial injury. Post-epileptic delirium.

The following case, following a slight dizzy turn three of four weeks after a fracture with meningeal hemorrhage, shows a *deficient appreciation of the situation with uneasy sullen attitude*. Improvement in two months. Alcoholism and queerness preceding the injury.

Case 22. A. H. Born 1868, of Mass., Canadian parentage; waiter; married; father of five children. For six years has been intemperate.

October 26, 1901, the patient was picked up in the street, taken to the Boston City Hospital unconscious, bleeding from the left ear, the head

drawn to the left, the left pupil dilated, not reacting to light; slight ext. strabismus of both eyes. The right arm and leg flaccid, non-responsive, the right knee-jerk diminished; Babinski reflex on both sides, more marked on the right; cremasteric absent on the right. An operation found the left meningeal artery bleeding and an extradural clot one inch thick and as far as the finger could reach. Recovery with a small sinus of the scalp.

November 22, the patient had a "slight dizzy turn," but was all right. November 24, he was vaccinated. November 26, he became noisy, threatened to escape, refused treatment; sedatives quieted him; he again helped on the ward. December 2, he became again sullen and uncivil. He refused treatment, said he was not sick, at the same time he complains that nothing is done for him. He talks disconnectedly of insufficient food, that the patients are against him, that he will have nothing to do with them—"The doctors do not treat me right. You see that big scar? The ether they used has taken away my hearing in that ear, my eyesight and my teeth." "I shall advertise the whole thing." At other times he worked again. December 5, he refused to have his head dressed by the house officer and even the visiting surgeon; at night he slipped out of the ward and went home and was brought back by the police because he made violent threats to his wife. At this time the wife stated he had shown *queerness* and inability to support the family for four years.

On admission to Worcester Insane Hospital, December 13, 1901, the patient was clear. He said he was fussy at the hospital. He had a discharge of yellow fluid from the sinus, slightly smooth forehead on the left, a more subjective inability to wink the left eye. Equal exaggeration of knee-jerks. He makes frequent petty complaints, is often saucy, impudent and sullen, speaks of the wrong done him by the commitment. Says he is a surgical case, but wants to get out of the bandage—"if my wife sees that she will think I am nutty sure."

During February he became more pleasant and was discharged much improved February 19, 1902.

The next case shows *invalidism* following a fracture of the base—sadness, lack of ambition, headache; *epileptoid attacks* two years after the injury followed by attacks of fear. Arteriosclerosis; tremor, incoordination, slight slurring of speech. Improvement. Previous alcoholism.

Case 23. J. M. Family history negative. Patient born in Ireland, 1847, brought up in Mass.; veteran of civil war; married 1872; 4 children; the patient worked as a fruit peddler, and led a congenial, happy life. At times he drank heavily, up to an injury May 18, 1900, when he was thrown from his wagon by an electric car, struck on the head over his left temple, bled from ears and nose, and was unconscious one hour. Since then he did not work, seemed sad, devoid of ambition, cried often, refused to be comforted, sat around the house. The head gradually began to ache at the site of the injury. He grew worse.

April 30, 1902, the patient got up from his bed, walked into another room and suddenly fell against a stove, rigid and trembling all over. In a few moments he regained consciousness but felt weak and stayed in bed a week. He staggered when walking but showed no paralysis. Soon after this, he imagined he saw a man with a knife after him—"he was standing near a lamp-post with his hands in the pocket and moving them, so" (the patient showed the physicians how and explained that there was a concealed knife). He would not go out of doors without an implement of defense after this. June and July he had two severer fits and asked to go to Worcester to get cured. He is afraid he might do some harm, or kill himself.

At the hospital (July 21, 1902), the patient was quite adaptable, depressed, home-sick in the first ward; he was perfectly oriented, had a good grasp on the situation, practically no memory defect (but he claims he was born in Cambridge). Calculation poor. Speech tests with some slurring and elisions; writing poor (no schooling). There is a small scar over the left forehead. The patient feels better, at times sick at the stomach; pupils and vision normal; hearing slightly impaired on both sides; reflexes exaggerated, equal; slight tremor of tongue and hand; slight incoordination of hands; slight swaying in Romberg position, considerably thickened and tortuous radials and brachials.

The patient felt much better and September 1, 1902, was discharged improved.

Case 4 (p. 380) deserves to be put down here, as a case of change of character and an *epileptiform psychosis*, relief by operation and *great susceptibility to alcohol later*.

In another, Case 24, a trauma to the right parietal lobe, was followed by a *period of relative ability to work*, then, in four weeks, *in connection with headache, an acute hallucinosis* which is stamped as *hysterical* by the peculiar subsequent development (typical hysterical attacks). Probably no alcoholism. Final outcome not known yet.

Case 24. J. H. Patient born 1870; 27 years old, wire mill worker; married; one child; born in Finland, slight alcoholism. 1890, gonorrhœa.

1892, injury to occiput, with no consequences but dimness of vision in outer half of right visual field (history indefinite), coming on several months after injury. 1894, in Ottawa hospital with abscess of right leg which was opened, healed in 7 weeks. Three weeks later second admission, with cold in chest, 7 weeks.

1897, February 1, struck by ice on right parietal bone, without falling, walked home; next day worked half a day then returned home to bed; in bed four days; pain in left occipital and upper cervical region; *feeling of stiffness* and poor use of left forearm and fingers; during 3-4 days internal strabismus of left eye, *transitory diplopia*. *Dimness of vision of left eye*.

February 5-28; occasionally slight vertigo or staggering at work; use of arm good.

February 28, splitting pain in the head. Hallucinations of sight and hearing (men on the wall; "listen, they are pouring water into my body; Mr. Cleveland is selling soap in the street"). Attack of violence and destructiveness.

March 5, occasionally fits of grimaces. March 13, examination: Pain point on left parietal region. *Constriction of both visual fields*, especially the outer quadrants and the right inferior one, simulating bitemporal hemianopsia. *Smell* less on left side. *Taste* on left anterior part of tongue diminished. *Tactile sense* slightly reduced on face (and arm?). *Pain sense* (?) *Muscular power* seems occasionally diminished on left side. *Knee-jerk* varying, slight, occasionally increased. No ankle clonus. *Pes valgus*. *Sensorium* normal, somewhat dull and sleepy.

March 27, on clinical demonstration to the staff: pain point on left parietal and left inframammary. Hemianalgesia sinistra. Hysterical fits. When patient entered the room he looked around with some hesitation, and went to the chair assigned to him with some uncertainty, trembling. He then was noticed to stare at the wall looking at one point, then further towards the ceiling, then at the floor, as if he saw something. Then he became restless, grasped the arms of the chair and with his muscles contracted raised himself spasmodically as if to get away from something, without fear but going into a silly laughter. Then he sat down looking vacantly, unable to say that he had done something or why he did it. These conditions came at intervals of several minutes, and lasted from $\frac{1}{2}$ to 1 minute, one particularly long spell occurring when the patient took off his shoes and socks. The subsequent attacks became more and more of the type of laughter in a vacant condition. When standing with eyes shut a tendency to fall backward. Analgesia of whole of left side of body and head. Questioned next day as to reasons for conduct, could get no answer other than "the doctors see my foot."

While formerly he had adapted himself as well as his poor knowledge of the language permitted and had given a consistent account of his history, the patient would show his hysterical fits much oftener and at times he was unable to arrive at any reply.

April 8, when the doctor said "good morning," the patient commenced a series of postures, principally of the eyes and head, but also of the hands and body. His eyes were directed at first to the extreme left with a silly furtive look; the head then dropped forward with the eyes closed in resignation attitude; then the head thrust forward and the features put in a show-off attitude. Then turned round posturing as he did so. Seated on a bench—at intervals he picked forcibly at his clothes, then rolled his eyeballs up ad maximum, then became semi-rigid with panting respiration and fell over to the right, rigidly as though to lie down, but sustained himself midway for a moment and later recovered. At the end of the attack he usually takes a long breath. He frequently makes smacking

movements, pupils not widely dilated. Right knee-jerk absent. No Romberg. Anæsthesia of both sides of the body.

April 9, sitting on the bench with the index-finger of his right hand and the hand and arm slowly extended as though to point to something on the floor. Then his arm was slowly drawn up and the tips of his fingers placed on his forehead. All the time he moves his lips and whispers to himself. When shaken repeatedly he breaks out into nervous laughter. He does not react to the prick of a pin on either side. He makes chewing movements, looks without staring but without fixing. When forced to fix, he begins to turn his eyes upward and to the left, at the same time pushing his right hand forward. He frequently pinches his trousers and pulls them as he would pull the cords of a cello. Some of the movements are executed with a foolish smile. When the eyeball is touched the eyelids quiver very little and the lids close slowly. At other times, even when the eye is shut, it is turned either to the right or left to the extreme limit. Once he responded to a call and looked up. To the question, "How are you?" he simply answers with movement of lips. What is the matter with you? Again answers with movement of lips. Have you any headache? He slowly shakes his head.

April 22, the question of transfer to Finland called for decided and quick replies on the part of the patient who did not want to go. Tenderness of the head disappeared. Fits are rare and easily interrupted by speaking sharply. When the decision of discharge to Finland was settled the fits became more numerous. The last note, April 30, is as follows: Spoken to repeatedly he does not answer; he smiles a little, looking blankly at walls or ceiling; reacts to pinching but says nothing. No knee-jerks obtained. No Romberg. No pain points. Reacts perfectly but evidently does not care to talk. Pupils react perfectly. Field of vision slightly restricted on temporal side of left (40-50°); on right perhaps slightly in upper quadrant. Tongue straight but tremulous. Hearing about the same in both ears. Half an hour later seen playing ball alertly, catching it well and running after it swiftly.

May 8, several days before discharge on second visit of the State agent, he went through movements similar to those described above.

Discharged care of B'd L. & Ch. to go to Finland. *Not improved.*

The following, Case 25, is an instance of a *neurasthenic irritability following trauma, with several peculiar episodes*. The first commitment, two years after the injury, was caused by *threats* to his wife; the second by a *peculiar dream-like episode*, in the course of an exacerbation of *hypochondriacal depression*; and the third, after an *attempt at suicide*. The patient had syphilis 13 years before the trauma, but no sufficient indications of general paralysis.

Case 25. M. J. M. Father a hard drinker. Patient born 1866; average development. Freight clerk, then an English soldier for four years.

Chancre and anti-syphilitic treatment 1885. Spring 1888, copper-colored spots later with matter in the center, healing up spontaneously. Married 1893; 3 children. In the U. S. since 1888, he has been in the steady employ of the West End Car Co.

February, 1898, a fall from the running board of a car; momentarily stunned, but able to take the car to the stable; the injury caused ulceration of leg, which has broken out about seven times since. Shortly afterwards (November), the patient began to be irritable with his wife (who had loaned their money to her mother and did not get it back until the day of his commitment). May, 1900, the patient made several threats, of doing the Borden act some day (i. e. killing the whole family); he kicked his little girl twice, nailed the coffinplate of their dead child to the door and laughed when his wife asked what he meant. A revolver was taken from him. He was going to sell it!

The patient showed exaggeration of reflexes, a fine tremor of tongue and hands at rest, no defect of writing; very variable pulse (84 standing; it rose to 120 while being counted). He admitted feeling nervous. His sleep was irregular. He went home June 23, 1900. He found no work for 2-3 months and was often discouraged. Then he washed street cars from October till Christmas, and stopped because he felt weak and dizzy. He would lie in bed a few days, speak and eat little, complain of headache; in March, he imagined he was snow-bound and seemed disoriented then; he often asked why he was kept in the house, stood in the corner and often said: "I am doomed." For several weeks he had "shivering spells," a general tremor lasting from a few hours to a day; he slept poorly. He thought his stay at the hospital would keep him from work. April 2, 1901, he got up at 4:45, walked about the street without coat or hat, and was arrested; at the police station he did not seem to know just what had happened.

On admission April 2, 1901, the patient was pleasant to the physician, but sat sad with his head bowed, and hesitant in his replies. He was oriented as to place, but thought it was March 27, 1901; the memory of recent events was a little blurred, but not that of past. He accounts for the return by saying: "I turned on the water and drowned four people. They were in their rooms; they were my wife's father, mother, one sister and one brother. They were in the cellar at the time and I flooded the cellar." Why? "Just to let it run and to see how it worked. I let it run for a half hour." That could not have been enough? "No, I don't know where the rest of the water came from." When was this? "Saturday evening." When was the funeral? "They are not buried yet. I don't know when they will be. I'm here for having *caused the death of those four people*, also I'm a *physical and mental wreck*. I'm all run down and weigh only 57 pounds. I am strong enough to lift double my own weight. Sometimes I say things that I don't know afterwards that I said them. I worry because I'm down as far as I can go physically. I feel depressed for the same reason. I always think of what the outcome of this will be. Since I left here I

have eaten only a few weeks and the rest of the time ate only a little. The first time I came here I made a threat to shoot my wife because of family trouble and money matters. She spent too much." He denied amnesic periods. "I left the house at 7 A. M. yesterday morning (it was 4:45 A. M.), because I had killed those four people and wanted to escape arrest and to go as far away as possible. A policeman met me 100 yards from the house and arrested me and took me to jail. They did not try me for murder. But I said I was mentally weak and they sent me here." No defect in writing or speech. No insight into his delusions. "My stomach and intestines are still intact but shrivelled up and I always have a hungry feeling." The next day he was duller and slower. He said he felt dizzy, but gave the same account and added the policeman had told the doctor "that I was going to Fresh Pond to jump overboard, but that was not true." "It was 5 A. M., the day before yesterday." April 5 he corrected both delusions and worked. In the course of May, his appreciation of time was at times slightly at fault. The pupils were perhaps slightly sluggish, the knee-jerks exaggerated, hands and tongue showed some tremor. A few days after an attack of erysipelas he escaped and was found the next day near the lake, as he had failed to get a ticket at the station. He admitted that he felt discouraged. Two days later he sent out a letter complaining of ill-treatment. When confronted with it, he admitted it, and said "I am guilty of lying Doctor, and I have acted like a cur." He nevertheless tried to smuggle an identical letter asking for poison two days later; but then resumed some work. During August and October he did well and had perfect insight. He showed a *difference of the knee-jerks*—the left was more marked than the right; also the left Achilles reflex and slight tremor. November 8, 1901, he was discharged much improved.

He worked in three different places at small pay, but sent his wife money. In an attack of depression he was found unconscious in the bath room with the gas turned on June 26, 1902. He claims he just felt sick at his stomach and that he came to in the Carney hospital. He had drank "quite a good deal" in the past two weeks. On admission he was very careful to dissimulate suicidal intents. A very careful status showed no deterioration. Speech and writing are perfect. The day before the "accident" he had blistered his legs in the foundry. In his last conversation he gave a good account, but did not refer to his original trauma. No difference of knee-jerks noted.

In quite a few patients the traumatism has a decided part in the subsequent development of a *paranoic symptom-complex of by no means typical nature*; in one case *blindness* contributed, in another case a certain *constitutional deficiency*.

Case 26. D. P. T. A bright boy who lost his left eye at the age of 5, and the right eye through "cataract" at 20; happy disposition. At the age of 20 injury by a train, dislocation of the left shoulder, fracture of 7th,

8th, 9th and 10th ribs of the left side; fracture of the right ulna with dislocation of the right radius, bleeding from nose and mouth for a few hours, unconsciousness and involuntary micturition and defecation for three days. After the accident the patient became peevish, irritable; about six years later exceedingly cross and ill-tempered, quarrelsome, he would strike on the least provocation. Claimed people were talking about him, making fun of him. At the age of 28 he began to argue on religious subjects, claimed the priest had deprived him of money, shouted at times "long live the Freemasons." He accused his sister of trying to poison him, tasted kerosene in his tea and became violent to his sister and neighbors.

At the hospital he showed perfect orientation, subjective deterioration of memory (not demonstrated). He maintained that the Freemasons controlled pretty much everything and are the cause of his commitment. The Roman Catholic Church is the only true church; it is a sin that Protestant ministers are allowed to live. He claims he wrote this to papers in 1892 and that a priest replied (*fabrication*). Denies all charges of ill temper. The patient is excessively fat, with practically no beard; under development of testicles, webtoed on both feet; traumatic deformity of right arm; scars of unsuccessful operations on the eyes; diminution of the right knee-jerk. The patient showed a certain indolence and slightly surly attitude at times, made light of his ideas, and in two years went home again.

Summary.—Trauma in a blind young man; peevishness and irritability. In the course of six years development of a vague paranoiac complex with fabrications.

Case 27. J. L. B. Born 1868. Puberty at 12; easily aroused and apt to become despondent; *always excitable*, dissatisfied, craving to get everything she saw—piano, bicycle, etc. Married 1890. 1894 thrown from bicycle; 18 days unconscious, five weeks at Mass. Gen. Hospital. Since then *loss of memory*, had to keep memoranda, to look at the paper for date, would sit around instead of working and have the husband do the work, would easily become *impulsive*, began to imagine the neighbors said unkind things, *made up a story* about the settlement of her case in court, etc. *Delusions of poisoning*.

Admitted July 27, 1897; very small miniature frame, but well formed. Hearing 2 inch on right, normal on left. Knee-jerks increased. Tremor of tongue and hands. Sleep poor. Here in half delirious condition until August 8. Restless, talking of going to opera, of clothes and piano being taken away; of somebody saying the baby was in trouble; also that Georgia (sister), and Frank (brother) were dead; of vermin in food, rats gnawing feet; ill treatment, no flight of ideas; hallucinations. Interprets talk and noises; over-affectionate to physician (dear doctor!). August 9, complains of bigamy of husband, gains orientation. Letter of August 16, to sister—perhaps she "dreamt" of above things. August 19, fabrication of friends having collected money to build a fine house for her—long picture.

The patient remembers the occasion on which she met with her accident, but the latter only from hearsay. She adapts herself fairly well to the hospital routine, began to work a little, but soon developed peculiar fabrications.

November 3, 1897, she went into the supervisor's room and persistently talked on sexual matters. She said her husband joined the Masons about the time of her accident, that it was a rite of the order that the wife should have connection with as many men as she was years old, that one night two men came to her room in the ward, that she saw them, then smelled chloroform and knew nothing more until morning; then she knew that the men had had intercourse with her; she insists that this has repeatedly occurred; that different physicians of the hospital have taken her out to the grove and kept her all night; she quotes bible texts drawing inferences of a sexual nature.

November 16, the patient when combing her hair seemed to grow faint, and when the physician came, she talked of a tall man who wanted to take her out for immoral purposes. She seemed frightened and begged to be allowed to kill herself; she had hidden a pair of scissors in the afternoon. Next morning she gave a long account of feeling a little faint, "cold like." Claimed that the other day she went out with that tall man and they went driving. She gave a complete story. When did the man call? "The first of the week." Yesterday? "No it wasn't yesterday it was Saturday, no it was yesterday, Monday." How was it? "Why he called and an attendant was with Dr. Quinby." Where were you Saturday? "Oh I went as far as Boston." "Nobody knew about it here." "But my husband knew I was in town. We went around where he worked. He was greatly shocked; he saw me in knee bloomers and a cap." Where did you get those things? "He hired them." Did you dream this? "Oh, I wish it were a dream." You never were out of here at all except for walks? "I wish I wasn't, but my husband knows all about it. I'll tell you why it was, my sister married a Catholic lady, my brother married a Catholic and this one made him promise to be a Catholic. But Cris and I wouldn't be Catholics, but I wasn't bigoted. I wouldn't change, as I had been brought up a Protestant. I wouldn't join the Catholics." What has that to do with the story? "Oh, you see everything is for money." This and similar topics were brought up again repeatedly. She frequently complains. June 8, 1898, she wrote to a cousin "I would like to be removed from here. I have been annoyed again this week and had to sell fish from a wagon in the street. And have been operated on and am in much pain, all my private bills and marriage papers are here in a building on the grounds, I have made butter and was sent to see it; I have been taken by enemies to Boston and made nude in the street and they brought me to the police station, I have had a dress sent me, and hat and I did not receive it. I have been taken away, and put on the cars and brought to Boston. I received five dollars for the making of a dress and did not receive it. Have been carried to Boston on a freight train and my enemies have taken me to houses of ill fame," etc.

Patient is easy-going, addresses the physician in German with "du." She has frequent complaints, but behaves on the whole normally.

August, 1899, she would not believe that her husband was dead (he died in the State Almshouse). "Somebody is perpetrating a fraud for the

insurance money." Soon afterwards she claimed that he had called on her; at other times she expected him to call.

It is difficult to see any especial change in her condition at the times of fabrication, except that they occur in connection with slight outbreaks of irritability. The memory for dates, etc., is very fair. Her application to work is usually satisfactory.

Summary.—Slight constitutional defect. Cranial injury with prolonged unconsciousness. Great difficulty of memory, indifference and gradual development of a paranoiac condition with greatly varied but fairly systematized fabrications.

In the following case, the *paranoiac condition* developed so closely in connection with the convalescence and so strikingly *resembling many non-traumatic cases*, that a more than accidental causation cannot be laid to the trauma.

Case 28. A. T. Born in Ireland, 1840, of average family. A smart girl. Married at 18; a widow at 21; in U. S. since the age of 28. Occupied as a cook; not intemperate.

At the age of 52 the patient fell down the steps, broke both forearms, cut the forehead over the eyes and was unconscious over an hour, remained in bed 14 weeks, and during this time developed delusions of robbery. She thought her sister who had just come from Ireland, came after her money. Everything that was done, was done to get her money away. She was able to take care of herself again and boarded alone in several places. Eight years later commitment was necessary. She was unable to sleep at night and kept the household awake by crying out to unseen tormentors. All her little ailments, pain in the shoulder, or brown spots on the hands, she lays to a man.

Who is this man? "He is Clifford's wife's brother and he is tormenting me day and night, throwing stuff down on my hands and feet. If I was eating my dinner he would throw stuff down on me, but on nobody else. When I went to the closet he would give me a slap in the face. He is in league with the spiritualists, he can rap and get as many people as he wants. When I was reading or sewing he threw something like powdered sugar; it would leave the mark here (shows hands). I never knew what it was to be sick till these spiritualists got after me, but whenever I tried to get up, something pulled me down again as if someone was dragging me. One night when I was asleep it was the same as someone rolling over my head; five different times it was." Have you felt these things since coming here? "Yes, I feel them, they follow me all the time, these spiritualists." Why are they doing this? "I am told they make money by this; the society pays them; I don't know what society, some sick people belong to them. When I was in the hospital Dr. Proctor wrote to Dr. Beaker; tell them the woman is very sick and take these things away from her. It is like two fish stalls and they don't want to go against one another." Now how long has this been going on? "Six or seven years; they come different

people out in the same plot to persecute me and one paid so much a week or month. They are invisible. They are on my hands; they are stiff I can't shut them. My shoulder feels just now as if some one was sleeping on it. Some of the doctors can take those spiritualists off, but I don't know how."

No physical disorders; the same complaints in the hospital. During an attack of pneumonia with a temperature of 104 absolutely no change of mental condition.

- ✓ For the types of deterioration we refer again to the cases 7 (invalidism after very severe concussion on partly alcoholic ground with subsequent paranoiac development and final pseudo-stupor), 4 (deterioration with traumatic epilepsy), and 6 (dementia in a case with alcoholism and traumatic epilepsy).

In the cases mentioned little stress was laid on the *feature of psychic causation* involved in traumatism. The following three cases show clearly how difficult it is to say what symptoms are to be accounted for by the trauma and what others by the *mental shock and the effect of the consequences*.

Case 29. E. D. The patient 46 years old, whose brother is insane, but who showed nothing peculiar himself, fell on the ice, 1898, and ran a sharp stick about one inch in diameter into the anus. A hemorrhage resulted. He worked afterwards but had severe pain in the abdomen and small of the back, particularly on bending over. He threatened suicide, wanted an abdominal operation; became hypochondriacal, complained that the skin burned like fire, that he got no sleep, threatened to operate on himself with a razor or commit suicide. April 21, 1899, he was depressed, complained of dizziness in the head; wanted to go to a hospital. He had walked away, tried to drown himself in a brook, was caught, became irritable, violent, was arrested and committed. He showed perfect orientation; admitted that his head "was mixed up"; "swimming around"; "as if in a vise"; that his body is burning and itching all over; there is buzzing in the ears; the bowels do not move properly, and he cannot sleep. Two days later he uttered a self-accusation, that he is not fit to live because he once had cohabitation with a dog. "I ain't fit to live among people. No! I'll never see God again, I ain't as good as a dog." In three days he began to work, he became less nervous and restless, still complained of excessive heat over region of abdomen; but slept better. On June 24, 1899, he was discharged recovered.

Physically there had been only internal strabismus of the right eye, the above sensation and dull pain in the small of the back and over the suprapubic region but without any objective symptoms.

Summary.—*Hypochondriacal depression* following diffuse traumatism and injury to the anal region with *swimming of head and suicidal impulses*; amnesia is claimed for the drowning episode.

Case 30. M. J. F. Family history, negative. Born in Ireland, 1868. Patient came to the U. S. 1886, after having worked on a farm from the age of 12 years. After a few years of work with a contractor, later in a tannery, the patient became a roofer, and began independent work 1895. He is married since 1889; has four children in good health. Moderate alcoholism, no intoxications, no "horrors."

The patient was perfectly well up to the subway explosion, March 4, 1897. He then came home pale and shaking, at other times he flushed, seemed "all rattled and nervous." He grew depressed, emotional when reading anything sad in the paper; hearing and eye-sight seemed affected. He would sit in one position with head on hand, did not speak unless spoken to. Within a week he went to see Doctor Putnam. Next night he went on the street in his night-shirt and was brought back by an officer who thought he was drunk. Next morning he was in a stupor; staid in bed four weeks; grew gradually better and resumed his work. He had to hire men to do any perilous work, as he would get shaky when climbing the roofs; he began to take three to four drinks a day to keep steady, but never enough to make him stagger; he thought people were down on him; that men followed him. He became depressed, seemingly indifferent to the family, emotional, sleepless, the least noise scared him. For a week he did not come home in June, staid with a former employer; one night he was seen near his store and urged to go to his wife, but he replied "he had no home." The next thing the wife heard was a letter from Jersey City saying only "I am on my way to fortune or death." In a letter to a friend of his wife's he next reported that he "was a prisoner in a camp in Georgia," that he "was sorry he had enlisted" (June 14, 1898). He wrote home about every ten days short and sad letters, wanted his wife to secure his release. The patient himself states that he had no remembrance of going to the recruiting office, and only a vague one of his arrival at Fort McPherson, that he then had the idea that he had been away a year or more; that the family was scattered and lost; that so long a time had elapsed that there was no need of writing to the old address, and so he wrote to a friend inclosing a letter to his wife. In camp he was told by his friends that at times he wandered about aimlessly, sad; when the sunset and sunrise gun was fired, he would tremble and shake; he would see all the incidents of the explosion pass before him—people yelling, flashes of fire and breaking glass; at night he had frequent nightmares. Soon after the transfer to Montauk Point he was granted a leave of absence; he came home, cried most of the time, was depressed, thought everybody was against him, and he even doubted his wife's affection for him, but had no delusions of her unfaithfulness. He had always sent her money; he wanted his release; on his return to Montauk Point he was soon transferred to Ft. Brady, where he worried about his wife; then the regiment was sent to Ft. Sheridan, and, on his wife's request for release, on the statement that she was sick and destitute, he returned home. The first week he seemed all right, but soon became depressed, worked very hard, grew despondent because he could not

shake off the fear, threatened suicide, noise made him start; he became greatly excited and trembling, looked dazed and did not seem to be able to remember. His condition was especially aggravated by a fire, by which the patient was scared.

From the War Department no record could be obtained. The only time the patient was sick he was in the hospital with diarrhoea for several days in August, 1898. He was honorably discharged early in February 1899, and seen soon afterwards by Dr. S. A. Lord. The patient told him that for a long time his mind was a blank; his memory appeared extremely vague for all events since the accident, but especially in regard to those occurring in the summer directly following. He was tremulous and apathetic. His wife said that he spent money irresponsibly, and that he complained that the neighbors watched him and talked ill of him, that he thinks people follow him, that he was very ugly when found fault with and caused fear of violence.

On admission, March 9, 1899, the patient was disoriented as to the place, thought it was a general hospital, Wednesday instead of Friday—the first part of March, and after long hesitance gives the year as 1891, later corrects it. The next day he appeared apprehensive, moving nervously about in the ward. In conversation he becomes easily irritated, stares and says: "There is no use in talking about that explosion, if the people about here hear about it I will get no work at all"—"That's why I could not get work." He claimed he had been told he was coming to get work here in the hospital building. He thinks he is able to work. In the examination he refused to read, says, "My eyes are all right. That is the very way I got out of work." His memory is somewhat hazy, he cannot give the year of his marriage, but says correctly it was ten years ago. When asked how things looked outside, he says, "I don't know until I look. I think there is snow"—"It is either March or April." He has marked tremor of the hands increased considerably on motion; the tongue is broad with very slight twitching; knee-jerks are exaggerated, pupils react; with eyes closed there is a slight unsteadiness. The writing is very irregular and defective, as shown in "comon welth Msscutes"; when he came to "Commonwealth," he said "Oh, that is enough"—"You write it first and I will write it after you." Articulation tests are slowly but correctly performed although somewhat jerky.

Ten days later he was perfectly oriented as to time, place, and person; still marked shaking of the limbs, and a considerable irritability when examined concerning alcoholic and sexual history. Calculation is correct, except "10 x 13 equals 156." He discusses the war intelligently. The writing test is "God save The Comon Welth of Massahusett, March 1899 Wednesday."

March 26, he writes "Common Welth of Massachusett—" The tongue then was steady, the hands showed still considerable jerky tremor, increased on rotation. April 4, he appeared much better, gave a good account of the *day of the explosion*. He remembers going to work on that day; that he forgot one of his tools, and had to go back for it; he was about 60 feet from

the explosion, saw the flash, dropped, felt as if his head split apart, he heard noises like breaking of glass, musketry, every thing was swimming and dizzy, he tried to work, but had to stop. Since then any sudden noise makes him nervous, and his memory has been poor so that he even did not know his own tools. He also remembers coming home from Chicago, and how he was started into the present attack by a fire in the basement of the house; he remembers the firemen rapping at the door, then he saw engines pumping water. He claims two periods of *amnesia*. One at the time of enlistment, and for one week later—he remembers Easter, 1898. The second period from the fire in the basement to one day after admission, that is altogether fifteen days. He is somewhat hazy even concerning the fire, it might be imagination, but thinks he remembers more and more the working of the engines, and asks for accurate information from his wife. May 4, the writing test was correct with the exception of "Welth." The patient showed absolutely no deterioration on careful examination; no delusions; but on May 20, he was transitorily sullen, refused three meals, but then resumed his work (painting bedsteads). He was rather shaky and still seemed to underrate his condition somewhat.

Physically, he showed chiefly the tremor, considerable swaying in the Romberg position and unsteadiness on turning and feeling of dizziness and difficulty of balancing; exaggerated reflexes and ankle clonus; oxaluria.

His sleep was poor for the first two weeks, very easily broken by any noise, which caused fear and trembling. The weight increased somewhat. The ankle clonus disappeared and also all evidence of incoordination.

Discharged June 1, 1899. No reply to letter of inquiry.

Summary.—*Traumatic cerebraesthesia following an explosion, with peculiar amnesic episodes, and at first, on admission, marked suspicion of general paralysis.*

Case 31. W. P. Family history, negative. The patient, a machinist, said to have been intemperate, but denying being intoxicated more than once or twice a year, was struck by a live wire, 1895; he was dazed; a day or two later in a dispute with the engineer, he was discharged. He became despondent, imagined he saw his brother and sister across the street and went to meet them; he came back saying "I thought I saw them." Visiting with his brother he sat in the room that day, gazing fixedly, saying nothing. The next day he thought everybody was after him. He attempted to throw the physician down the elevator shaft, sharpened some axes, hid them in his room. The physician made a diagnosis of pneumonia. He resumed work in five or six months, but has been more irritable and quick-tempered since then. The patient himself says that he was dazed ten minutes by the live wire; said he would not have gotten into the dispute but for that shock; slept poorly for eight months, and during an attack of grippe two weeks after the shock, he was out of his head. During the winter 1899-1900 the patient was unable to keep regularly at work on account of rheumatism, dull aching pain in his legs. This depressed him somewhat. Thursday April 26, 1900, he became quite restless and unsettled; asked a number of

very immodest questions; asked his daughter what kind of drawers she had on and then wanted to see them. He worked in the day but spent his evenings at home. One evening he asked his boy whether he had seen the witches, and the next day he put on his daughter's hat and danced around, saying she would be the May queen (April 28). Sunday he took a revolver and waved it around saying he must shoot the witches. He told his daughter to shoot his wife when she should come back for she was a witch. Monday he made indecent proposals to his eldest daughter, and used very indecent language to another daughter. To the physician on May 1, he admitted that he was not quite right, wanted to be sent to the hospital. He admits having spoken of his wife as a witch, that it was possible for her to fly through the air, that if he could find her he would kill her, that he was filled with electricity.

On admission he said—"They sent me up to the station for creating a disturbance and telling the old lady to get out." "I took her old box and told her to get out and she scooted, that's all I know"—"It was Tuesday" (Monday). Did you sleep last night? "I am a little ahead of the game ain't I? That Tuesday business—it must have been Monday for I slept there one night and came here yesterday." He claims the boy had been talking about witches and he picked the word up and told her "she was a witch and get out and she did. I guess there is two ribs broke." He speaks of "I wasn't right in my mind." What was the cause? "I don't know anything, only this juice I was getting (electricity), it put me into a very nervous condition." Calculation of dates perfectly correct.

Physical examination showed fibrillary tremor of hands and tongue; no speech defect, slight increase of knee-jerks; a few granular and hyaline casts and oxalate crystals. He was inclined to be refractory and cranky. July 31, he began to be more agreeable to his wife. August 4, he was struck on the head by a patient.

He still reaffirms the delusions of electricity, claims a right to talk to his daughter as he pleases.

In November he lost his indolent surly demeanor, gained full insight; the tremor disappeared. He was discharged, well.

Summary.—*Electric shock*, followed by an *irritable depression and temporary delirium* during pneumonia, recovery in five to six months. Five years later a *peculiar excitement* with feeling of nervousness, tendency to be refractory and cranky. Recovery in six months.

GENERAL ANALYSIS.

The question of *frequency* is by no means easy to establish. It is difficult to make the statistics of State hospitals as reliable as they should be. The best chance would be offered by an accurate census of the consequences of injury in a community where there is compulsory insurance or a pension-system. The

statistics of our insurance companies would naturally be vitiated owing to their settling their obligations as much as possible before the outcome can really be estimated; even litigation on this score is therefore not very frequent with our companies. The U. S. Pension Office would have an excellent opportunity in this direction; but its material is not worked up and not classified, according to a courteous reply from Mr. E. T. Ware, Commissioner, to an inquiry addressed to him. We therefore must depend on the medical report of the German army in the Franco-Prussian war and other army statistics. In the German war, among 8985 head injuries, 13 led to insanity. Stolper reports on 981 head injuries, 138 of which were severe concussions, with 12 cases of insanity, 11 of which were with severe injury and 9 of the type of direct post-traumatic aberration—so that we may well conclude that some of the cases may have shown subsequent symptoms. Doctor Bailey's statistics hardly cover a sufficiently long period after the injury, and the result of his inquiry in the State hospitals fed by New York City must be taken with caution, owing to the lack of organization of statistical work. This defect alone can explain the statement that among 5000 patients, there was not one who had had fracture of the base.

Our series presents the material of about 3000 admissions during the years 1896-1902. I am convinced that it does not include all the cases, so that probably nearly 1 per cent of fairly safe instances is obtained. Frost found the number to be 1.87 per cent in American hospitals; Kiernan 2 per cent; Edel $2\frac{1}{2}$ per cent. Hays (American Lancet, November, 1891), found 61 cases among 2500 patients. The high rate of 8 per cent (Clevenger), and 10 per cent (Schlager), probably depend on special conditions or liberality in the use of the term.

Reviewing our material we find a series of 23 cases with mental symptoms following a more or less profound traumatic insult to the head, with the following *types of injury*: In nine (7, 12, 14, 17, 20, 22, 23, 26, 27), a *fracture of the base* is, to say the least, extremely probable or certain; a *fracture or lesion of the convexity* in five (3, 4, 16, 21 and 24), and, at least, a more or less severe *general concussion* in seven (11, 13, 15, 18, 19, 25 and 28); one trauma was due to a *pistol shot* (10), and one to an

unknown trauma (6), which left a scar on the forehead. With these we compared the findings in a case of contusion of the frontal lobes (5), and a case of comminuted fracture of the parietal region (2) and a fall without fracture (1)—cases which did not show any special mental disease referable to the trauma—two cases of tumor (8 and 9), and three instances of accidents with largely psychic effects (29, 30 and 31); and of the series of 23 cases with certain mental symptoms in sufficiently certain relation to the trauma, an autopsy was available in O'C., Fl. M., and M. R., and an operative inspection in T. (6, 4, 7 and 3).

- Our first question is: *Is there a relation between special types of injury and the form of psychosis?* Lesions of the convexity or over the convexity produced epileptic or at least epileptiform disorders—3, 4, 21 and probably also 24; the diffuse concussions and basal fractures lead to: 1, *initial delirium* (11, 12, 13 and also the case of pistol shot in the right orbit), or 2, *paranoiac development*, i. e., a gradual development of a delusional state (26-28), but also very frequently to 3, *intercurrent episodes of a more or less epileptiform character*, spontaneous, or elicited by alcohol or grippe or other usually trivial exciting causes (14, 17, 18, 19, 20, 21, 22, 25). Where dementia resulted, it was due to a complication with epilepsy, alcoholism, or arteriosclerosis (4, 6, 7), or to the early age and consequent difficulties of growth (15).

The nature of the disorders in general hardly allows us to use the traditional terms mania, melancholia, etc. These terms would obscure the characteristic traits, since, indeed, the attacks deviate quite a little from non-traumatic mental disorders, notwithstanding superficial resemblances. While it is true that we cannot speak of a traumatic insanity—there are too many types—we see a sufficient number of characteristic traits. The primary disorders, the “protracted deliria” show beside partial disorientation usually variations between clearness and haziness of sensorium, a certain prominence of fabrications of dream-like situations (see the cases 10, 11, the second attack of cases 25 and 17), more or less coherent according to the sensorium, further, difficulty of ready remembrance and of calculation. Alcoholism seems to bring on epileptoid episodes, or at least mental states also seen (though not as frequently) in cases of non-traumatic

epilepsy (3, 21, 22, 23).⁶ The paranoiac forms are apt to have the difficulty in calculation, inaccuracy of memory and of appreciation of time, and at times a feeling of dizziness with episodes of fabrication, etc., or at least a certain imperfection in the systematization; only case 28 differs so little from an ordinary paranoiac condition that I take the injury to be merely an accidental cause.

On reviewing the literature it becomes obvious that reports of mere names of diseases help little. The brief accounts of Mickle show this well enough.

His case 2 (blow on the head followed by cerebral automatism with 300 miles of tramping, then a condition of vacant immobility alternating with weeping and outbreaks, then a condition between hallucinatory and stuporous insanity, with connected dream-romances or vivid hallucinosis and delusions of annoyance and torment connected with the hallucinations of hostile import) had a disappointment of failure in business as an architect. Catatonia⁷ is probable, the outcome not mentioned.

His second case of "psychoneurosis" refers to a patient committed 13 years after an injury with pain and tension of head, increased by warmth and stooping, constrictive head-pain, bad dreams, sleeplessness, strangeness of manner and expression, at times "apparently" hallucination of sight and hearing, kleptomania, often automatic, disposition self-willed, excitable, quarrelsome and explosive.

Cases 4 and 5 of Mickle show a hallucinosis of hostile import (accusations), and fear of brutality (in an alcoholic) and of somatic delusions (in a syphilitic after excesses). The outcome is not given. Three of his "depressions" recovered—one a dazed, confused self-worrying dejection with several suicidal attempts; another (an alcoholic), with a vivid depressive hallucinosis, and the third a depressive hallucinosis fifteen years after the injury, with recrudescence of pain. A fourth one (injury of left parietal bone) easily affected by drink, became depressed many years later.

From the group with immediate psychic symptoms, there are steady transitions to cases who practically showed a recovery from after-effects and a renewed manifestation of the "traumatic constitution" only on some special provocation. The patients are less resistive; headache, localized or general, is apt to appear, or a feeling of confusion and of loss of memory and dizziness and peculiar sensations in the head. A sudden irritable manner and a tendency to excesses are noted.

Under paranoia he describes cases of unsystematized delusions with hallu-

⁶ Wildermut reports 8 cases of traumatic epilepsy, and 5 of them had only psychic equivalents. And Wagner found the psychic equivalents three times as frequent in traumatic epilepsy as in ordinary epilepsy in the cases of the German army.

⁷ v. Muralt (*Allg. Z. f. Psych.* LVII, p. 457-489), describes seven cases of typical catatonia of traumatic origin.

cinations and transitions to the systematized paranoia, the classical change of character (p. 87) with paroxysms; several of the cases referred to by him pass clearly to the epileptoid and epileptic states; and these again show transition to types akin to general paralysis or actual general paralysis.

The statistics of Kiernan (*J. of N. & M. Dis.* 1881, p. 445-452), and those of Creighton Brown with 32 cases give one strongly the feeling that the quality and conclusiveness of the individual record is much more important than the number of cases. This holds especially for the numerous cases of general paralysis which are found in many statistics. We know now that either the diagnosis was made erroneously or that in a large number of these cases syphilis was the potent cause.

Ziehen clearly distinguishes primary traumatic psychoses, secondary traumatic psychoses and the traumatic psychopathic constitution.

Immediately on awakening from the coma, or up to one week after the injury the patient develops innumerable hallucinations, disorientation, incoherence, dizziness, disorders of coordination, violent excitement and anxiety, a condition of acute hallucinatory paranoiac dream-state. At times there is marked hypalgesia, or general hyperæsthesia. The gait resembles that of intoxication. Intercurrent somnolence is not infrequent. Rises of temperature occur also without meningitis or focal disease. With the profound disorder of association is connected the marked amnesic defect which usually continues after the acute symptoms disappear. The actions too have usually a very characteristic color; impulsive violence and an aimless running about or escaping occurs besides catatonic states. Recovery is frequent. Yet, not infrequently a chronic mental change follows, corresponding to a secondary traumatic psychosis.

These secondary psychoses belong largely to the group of defect psychoses, i. e., they are characterized by an increasing defect of intelligence, memory and judgment. Hence the term traumatic dementia. Frequently this traumatic secondary dementia when it increases progressively simulates the picture of paralytic dementia; for it also shows paretic signs and defects of coordination (of speech, etc.). Even the autopsy findings may resemble those of paretic dementia. In other cases the secondary dementia remains stationary at a certain point; the patient is normal apart from a certain defect of judgment, a loss in complex and especially in abstract concepts and the loss of complicated tones of feeling.

In a last series of cases, we merely find the so-called "Traumatic alteration," i. e., there is no fully developed psychosis, but a careful comparison of the psychic condition before and after the accident shows nevertheless that numerous slight psychic changes have come on since the injury. Those who knew the injured before, observe that he is more irritable and oppressed, tends to great vacillations of moods, tires more easily mentally, has experienced a slight loss in the breadth of interests, quickness and far-sightedness of judgment and mental productivity, and is less resistive to heat-effects and especially to alcohol. Physically one finds a tendency to headaches, attacks of dizziness (especially on stooping) and congestions.

This gives a soil for other etiological factors. A slight influence which before the injury was borne without pathological reaction leads, with this basis, to a grave psychosis, or traumatic neurasthenia, or hysteria may develop, and in at least 10 per cent epilepsy, which hastens the decay of intelligence. From these psychoses we must separate the traumatic reflex-psychosis depending on some scar acquired in the injury. They are rather rare and have nothing to do with the commotion. Outside of traumatic neurasthenia and traumatic hysteria, traumatic commotion plays an essential rôle in 2-3 per cent of all admissions.

The section on the traumatic constitution extends these remarks in a systematic manner. From the section on Dementia Traumatica I merely mention the differentiation from general paralysis. Ethical defects are not rare but usually not as grave as in the paralytic. The loss of memory and judgment too never is so profound. A typical period of exaltation is rare. Transitory confusional states are more frequent. The course becomes usually stationary. Hesitation and iridoplegia are very rare. In one case Ziehen saw absence of knee-jerks from small hemorrhages in the lumbar cord. Besides some focal symptoms meningitic symptoms may last for years, such as nausea and rigidity of the neck.

Kraepelin mentions especially the diminished psychical resistance, increased exhaustibility and distractibility, irritability and sensitiveness, diminished efficiency, difficulty of conception, of judgment, loss of interest. On this ground a paralysis-like condition may develop, or some accidental cause may determine another type of psychosis. The confusion immediately after the injury is one of difficulty of thought, remembrance, poor apperception, fabulation; moreover, irritability, obstinacy, restlessness, loquacity, poor insight into what is wanted.

Looking over our cases *etiologically*, we cannot fail to be impressed by the *concurrence of several etiological factors* in the greater majority. Even in the four cases of primary traumatic disorders, i. e., those which followed the injury immediately, constitutional peculiarity exists in two and alcoholism in one. A traumatic origin is claimed in case 16, with typical maniac-depressive insanity after the 26th year, traced to an injury shortly after birth; but here we also find an uncle with two attacks of insanity. In cases 17, 18 and 19, grippe or some transitory febrile attack led to the temporary derangement. In several patients who developed mental disorders some time after the injury, we may speak of an intermediate symptom-complex of invalidism (more or less akin to what happens in traumatic neurosis). In case 20, alcoholism led to aggravation of the invalidism and reappearance of debilitating emissions which had troubled the patient a few years before the trauma and then had

been connected with a transitory abnormal state. Cases 21, 22 and 23 show alcoholism at the bottom of the post-traumatic epilepsy or of epileptoid attacks; in case 25, syphilis and especially difficulty at home and of finding work can hardly be neglected. In case 26 blindness, and in case 27 constitutional under-development are of importance, in the cases 6 and 7 alcoholism, in case 4 constitutional under-development and heredity. This leaves but few cases in which trauma, as such, is the sole agent in the etiological constellation. *The question then is: would the patient have developed the mental disorder without the injury? Does the mental disorder show any typical traits speaking for trauma?*

To what extent do the forms depend on differences of make-up, and to what extent on differences of the form of damage?

In dealing with this question we cannot be too reserved. There is no direct measure of the damage of a concussion, as we have seen in the anatomical part. And the effect? It is most interesting to consider especially the so-called traumatic psychosis without actual involvement of the head, and for this purpose I have included the cases 29 and 30 in this series. Case 30 represents a traumatic neurosis. We might perhaps incriminate the molecular jars at the time of the explosion. Emotionalism, peculiar dazed actions, then a stupor; then after recovery a tendency to become shaky and dizzy; then a paranoiac development with depression and subsequent enlistment; return in a tremulous apathetic condition resembling general paralysis—the whole distinctly allied to conditions of Dämmerzustand with two periods of amnesia, similar to an epileptoid change of consciousness.

In another case (31), with an electric shock, we find rather the "explosive diathesis" with reduction of sensibility in moral matters.*

To refer these symptom-complexes to molecular changes although they are not sufficiently demonstrated, adds nothing to our knowledge, but is merely an unnecessary emphasis of the

* Jellinek (Virch. Arch. CLXX, p. 56) has recently studied these cases and those of lightning and the neurological and other effects are said to be "amply accounted for by hemorrhages, especially of the anterior horns and degeneration and destruction of ganglion cells."

natural belief that every symptom must in some way depend on some defect of an organ. As long as even the plain epileptic attack is explained merely by words such as "discharge," and other similes, it is best to abstain from attempts at hypothetical explanations and to remain on the empirical ground of statement of facts when we deal with amnesias, hysteria, neurasthenia, epilepsy, the deliria and other forms of insanity. Instead of disturbing our mind over more or less fantastic hypotheses, we shall do better to search for greater accuracy and definition of fact. In the cases of traumatic origin, we find *at least five directions in which we can push our clinical studies to greater precision and usefulness for attempts at correlations:*

1. Rieger's attempt at an *inventory of a patient's mental possibilities* is a procedure which demands much time, but is a step towards a safe method. The case of Voit, examined by Grashey, Sommer and Wolff, a man who developed a peculiar defect belonging to the field of aphasia, shows us that the study must not only cover the inventory of the available concepts and vocabulary, but especially the mechanism of their collaboration. This patient had a fracture of the skull, almost complete deafness of the right ear, total loss of smell, nearly complete loss of taste, and he merely saw motions of the hand with the right eye, while on the left visual acuity was two-thirds and the visual field concentrically reduced. The right facial paralyzed, the right hypoglossal paretic, the right skeletal muscles also. At first he misunderstood questions and answered them in a different sense. He recognized the meaning and use of objects, persons, verbs and adjectives. Yet he could not find the words on request, but would pick out the correct word from a series. Grashey showed that this defect was connected with a peculiar difficulty of remembrance. The patient was not able to compound letters into words and parts of pictures when he saw them successively. The patient had, however, the ability to find the words by writing, even with the feet, hands or tongue. Fixation of these parts disabled him again—the writing was not preceded by a thought of what was to be written. On the other hand Voit was capable of the concept of a common denominator of two objects although he usually could get at the word only by attempting to write. He showed a form of thinking without words. Moreover, he

was unable to say from memory how many feet a horse had, what color blood had, or grass, although he knew the color when he saw the object, or at least could pick it out, or find it by writing, as long as the object was before him. This case shows plainly that the inventory should cover not only the "dictionary," as it were, but the methods of mental working.*

2. The *study of the vaso-motor neurosis* of Friedmann. Does the case present permanently or on special provocation:

Headache (usually diffuse and dull, a general pressure, rather infrequently referred to a special point).

Dizziness, especially on stooping or sudden changes of position, often accompanied by nausea.

Tendency to flush or to get pale easily.

Intolerance to alcohol, strains and emotions such as annoyance over contradiction—often causing a general aggravation of the symptoms for days.

Intolerance to galvanization of the head and compression of the carotids.

Occurrence of attacks of congestion, even amounting to pseudo-meningitis (painful rigidity of neck, etc.)

To these I should add extreme exhaustibility, and with our present means in measuring the blood pressure we further find a great variability of the pressure.

3. The *examination for the "explosive diathesis"* of Kaplan: Especially after the use of some alcohol, the slightest, often quite impersonal, incident calls forth the most vivid effects of anger and the corresponding motor discharges; in the mildest degree merely an expression which is excessive and grotesque under the circumstances (with mimic, voice, extremities, etc.), in higher degrees acts of violence, at times leading up to a real epileptic fit. There is an excess in the reaction with inadequate adaptation to the situation, more and more remote from a well-considered aimful act, approaching a pure psychic reflex act in the shape of an almost or entirely unmodified explosion not unlike a convulsion.

4. Frequently associated with the latter, but also occurring

* Wolff, G., Ueber krankhafte Dissociation von Vorstellungen. Zeitsch. f. Psychol. u. Physiol. der Sinnesorgane, Vol. XV.

alone, without explosive traits, we found in our cases as a very important factor *all the possible degrees of episodes of more or less dazing and dream-states*; from a temporary dazed feeling to episodes of hysteriform or epileptoid absences. Apart from the subjective feeling of haziness, the characteristic trait is the occurrence of complete dream interpretations and peculiar fabrications, which color the primary traumatic insanity as well as the subacute and episodic types and even the paranoiac type (case 17). They are by no means limited to traumatic states, but also observed in brain-tumor, brain-syphilis, after insolation, which, after all, belong to similar types of brain alteration. Kaplan, too, observed "attacks of anxiety, at times with hallucinations, states of hallucinatory confusion, and also relatively orderly, more automaton-like actions, frequently with a merely dreamy perception and utilization of the outside world and more or less extensive haziness of memory; further simple absences and syncope, epileptic fits in 34 per cent, attacks of dizziness (often with chromatopsia and tinnitus) in 43 per cent of the cases; rush of blood, sudden changes of color, hyperhidrosis, attacks of salivation, hemicranic headache, elementary hallucinations. All these transitory, complicated and simple phenomena occur both spontaneously and with physical and mental exertions, in affective excitements, with even moderate use of alcohol, in heat, and especially on sudden changes of position of the body," i. e., with Friedmann's vaso-motor complex. I am inclined to include here also the so-called reflex-psychoses described by Köppe (*Kopfverletzungen als periphere Ursachen reflectirter Psychosen*; Dt. Arch. f. Klin. Med., 1874), which depend on definite peripheral irritations such as painful scars, and can hardly be kept wholly apart, as Ziehen wishes, from the cases with direct cerebral irritation by depressions of the skull or clots, such as my case T. (3). These are the cases giving an opportunity for operative interference.

5. Finally, we must establish the etiological constellation:

- a: Types of insanity in the family.
- b: Constitutional peculiarities and predisposition in the patient.
- c: Complications with alcoholism, syphilis, exposures and excesses.

d: The extent of the injury, its immediate after-effects; and especially also the extent of the mental shock.

e: The influences which are found to aggravate the symptoms or to elicit post-traumatic reactions, especially the factor of litigation, and of invalidism and its consequences.

Such inquiry in these five directions may meet with many cases in which the facts are strongly interwoven. It would, therefore, be futile to try and make a rigid classification of the cases along these lines. The purpose of these subdivisions is to get definition where it is possible to get it; to furnish a method and direction of examination and to avoid oversights. With all these precautions, it would seem probable, that in the large number of cases of truly traumatic origin we should find a combination of facts sufficiently characteristic to decide the frequently important diagnostic medico-legal and therapeutic questions, in such cases.

The question whether there is such a thing as traumatic insanity is easily answered on the basis of our material. We admit the term as a generic one. Where we have collected the facts, we do, however, well to give a brief descriptive designation for the mental picture, and, in addition, an expression of the relative importance of the etiological factors. *Psychiatry will never progress unless its diagnoses mean to be summaries of the available facts arranged according to their pathological or nosological bearing, instead of the traditional ill-defined terms.* And where our nomenclature is hazy, or a record made with insufficient regard for differentiations, nothing short of a concise rendering of the findings in plain language should be considered good enough, instead of a term which has too many connotations and may be used differently by writers and readers. In the absence of such accounts a reclassification of the statistics in the literature has no sense.

Summarizing our experience concerning clinical distinctions, we should discourage the hope for a strict classification, but suggest as salient types and as a means to keep order among the facts:

1. *The direct post-traumatic deliria with the following subdivisions.*

a: Preeminently febrile reactions.

b: The delirium nervosum of Dupuytren, not differing from deliria after operations, injuries, etc.

c: The delirium of slow solution of coma with or without alcoholic basis.

d: Forms of protracted deliria usually with numerous fabrications, etc. (with or without alcoholic or senile basis).

2. *The post-traumatic constitution.*

a: Types with mere facilitation of reaction to alcohol, gripe, etc.

b: Types with vaso-motor neurosis.

c: Types with explosive diathesis.

d: Types with hysteroid or epileptoid episodes with or without convulsions (such as most reflex-psychoses).

e: Types of paranoiac development.

3. *The traumatic defect conditions.*

a: Primary defects allied to aphasia.

b: Secondary deterioration in connection with epilepsy.

c: Terminal deterioration due to progressive alterations of the primarily injured parts, with or without arteriosclerosis.

4. *Psychoses in which trauma is merely a contributory factor.*

a: General paralysis with or without traumatic stigmata.

b: Manic-depressive and other transitory psychoses, catatonic deterioration and paranoiac conditions, with or without traumatic stigmata.

5. *Traumatic psychoses from injury not directly affecting the head.*

The *outcome* has evidently proved less gloomy in my cases than in the available statistics of Guder. I do not feel, however, that this question is settled by my experience, since many of the cases are of too short observation. The cases of Brower (*Traumatism in relation to insanity*; *Alienist and Neurologist*, 1883, IV, p. 646), and the case communicated by Dr. H. P. Frost (*AM. JOUR. OF INSANITY*, April, 1903), are good instances of what precaution is needed in the prognosis as well as in the use of even professional reports of an injury (concerning the sloughing away of brain substance). In Frost's case there were no symptoms except a sense of fullness in the head for 26 years after the injury, when a progressive slow development of palsy of the left arm and leg and of the right side of the face came on, together with emotionalism and irritability. Thirteen years later the patient was childish and irritable, but not in very deep dementia. The extensive organic nervous symptoms are partly accounted for by the anatomical findings—a hemiatrophy of the cerebrum

due to subcortical degenerations with cavity formation, without arteriosclerosis. Further there are obviously independent degenerations of Goll's and Gowers' tracts in the cord.

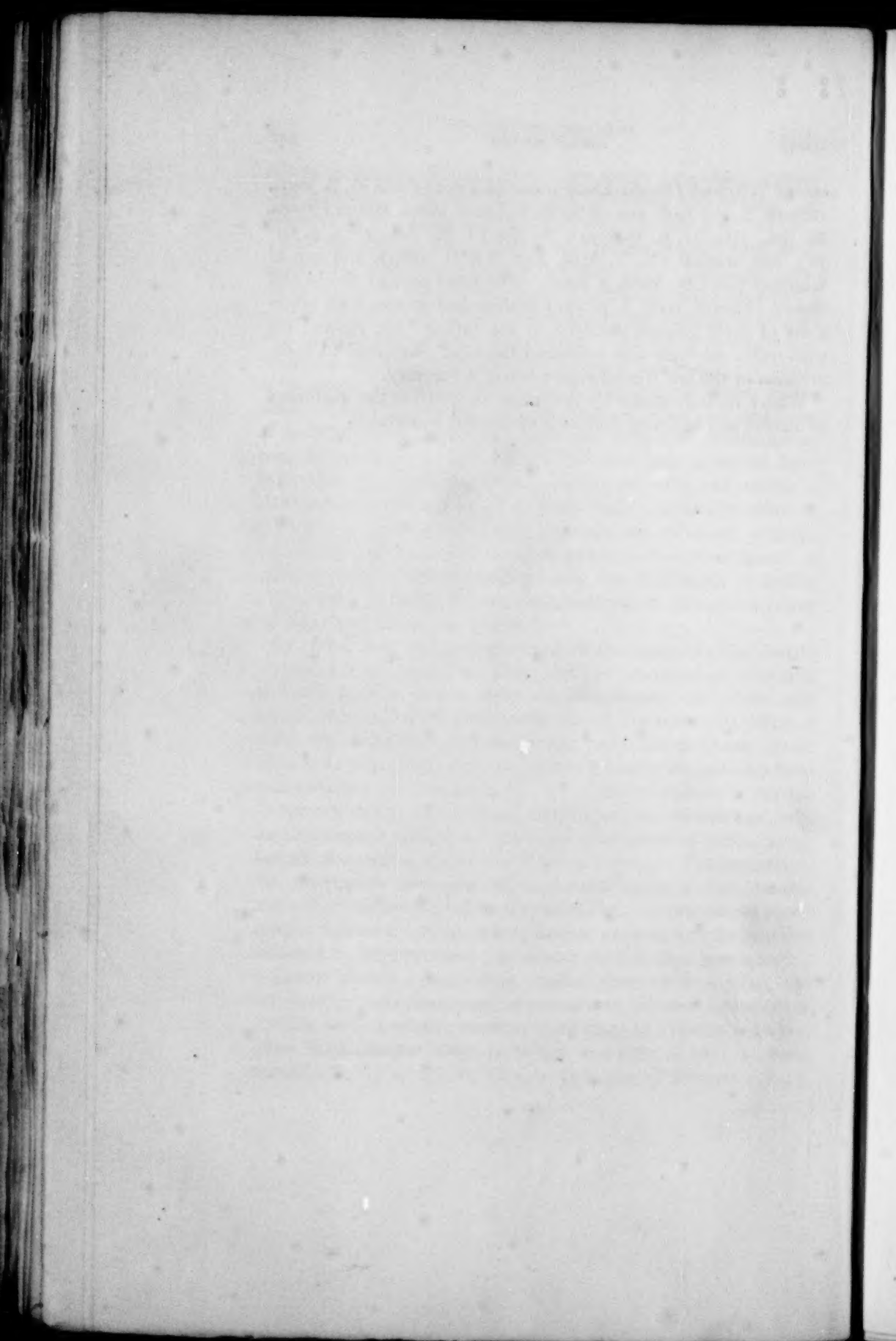
The possibilities of *therapeutic interference* are not very great apart from what is indicated symptomatically. The most hopeful cases would seem to be those of reflex-psychosis to which I should approach our case 3. There are in the literature a number of successful operations in such cases. The difficulty would naturally be the localization of the irritating factor and the prognosis would depend further on the multiplicity of lesions in the brain. Our case shows, however, plainly that *not only depression of the skull should be looked for*, but also clots even where no injury of the skull is noticeable. Whether case 4 would have been operable in earlier days is uncertain. On the whole, a chance should always be taken where there is sufficient evidence directing to a place of trephining; and in case of doubt, multiple trephining should be rather recommended than condemned. I consider this advice in keeping with the experience of Spiller concerning operation for the immediate effects of trauma (1902, *International Clinics*, p. 102-111).

M. Allen Starr refers to the cases of Dr. Carlos F. MacDonald (Amer. Journal Med. Sci., July, 1886)—two cases of traumatic epilepsy, one of which recovered completely, the other with partial dementia—and Park (Med. News, December 10, 1892—2 cases with recovery); further Frank and Church (Amer. Jour. Med. Sci., July, 1890), give a report of a young woman who after a head-injury became delirious, grew worse, suffered from the "ordinary symptoms of mania," which became chronic and went on to complete dementia. She was destructive at times, noisy, but for the most part sat idly silent and stupid. On removal of the depression over the right parietal bone a considerable amount of cerebro-spinal fluid gushed out. Improvement and a relapse followed. A second operation was more extensive, and followed by improvement (reported 1 month after operation).

Doctor Keen's operation in another case of depression was followed by only temporary improvement. Guder's case, Jena, (1886), made a relative recovery; two cases of Wherry recovered (Brit. Med. Journal, 1880, II, p. 622, and 1883, I, 767); also one case of Skae (J. of M. Sc., 1874, p. 552), one of Emmert (1851),

one of Wiegand (Krafft-Ebing), one of Price (Pacif. M. S. Jour., 1885-86, p. 101-103), one of Molliu (Lyon, 1881), Bacon (Journ. M. Sci., 1880-81, p. 551-554), Briggs (J. M. Sci., 1881, p. 67-70), McCormack (N. Y. Med. Rec. XXIII, 1883), and one of Kümmel (N. Cbl., 1889, p. 902). The latest case of Shield and Shawe (Lancet, 1903, I, p. 431) is described as one with symptoms of early general paralysis of the insane. He showed the vaso-motor neurosis and epileptoid haziness. Removal of a depression of the left frontal region brought recovery.

Where no indications for operation are present the avoidance of alcohol and irritating factors is of decided importance.



APPARENT RECOVERY IN A CASE OF PARANOIA.¹

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The following case, presenting several unusual features, seems worth placing on record. It is reported with some changes in non-essential external details for obvious reasons:

Case No. 1351, male, aged about 40. Single, journalist. Academic education. Father died of spinal meningitis in middle life. Mother, who died at over 70, was of good constitution. Six healthy brothers and sisters.

The patient, who was under treatment about four months in 1901, possessed a good constitution, was athletic in his youth, and had good health until about twelve years previous to coming under my care, when he was overcome with heat in a sub-tropical climate. From this time on he was very sensitive to the heat of the sun and presented a difference to his former self in being over-watchful and careful of all his feelings and symptoms; in fact, hypochondriacal and scarcely engaging in any business or employment, fearing to overtax his strength. His habits were very temperate; he did not use alcohol or tobacco. Venereal disease was denied and not shown by somatic signs. The patient led an easy and self-indulgent life, moving in affluent and fashionable circles of a large city, and was fond of social display. Personally he was possessed of very slender means.

The first indications of a morbid mental state, aside from hypochondria, had appeared about a year prior to my examination of him. He had previously fallen into financial difficulties by incurring expenses he could not meet, for flowers, bric-a-brac, etc. Finally a curio dealer, who had been unable to collect a bill from the patient, applied for payment to some very highly-placed people who had introduced him. This led to the patient being denounced among his own associates and, naturally, seriously hurt his feelings as well as standing and reputation. The first delusions of having enemies and being persecuted took their rise in

¹ Read before the 59th Annual Meeting of the American Medico-Psychological Association, at Washington, D. C., May 12-15, 1903.

this fact and were further intensified by his ungratified ambitions and desires, especially with reference to a beautiful, young unmarried woman, a blood relation of his, to whom he was most deeply attached and who was the recipient of universal homage and also of more substantial attentions from numerous friends, such as he would have liked to bestow upon her had he been able. His feelings resembled a fatherly affection, distorted by mental weakness and childishness, quite free at first from delusional ideas and mingled to a certain extent with envy. A friend of the family (whom we will call Mr. X.), a possessor of millions, together with his wife provided for the young lady an extensive European trip and presentation at foreign courts, which seemed especially to incur the resentment of our patient, and on the return of the party from Europe morbid suspicion and dislike found still further development. The patient appeared to have fears for the reputation of his relative, such fears as insanity alone could account for, but which produced a consternation and embarrassment readily imagined, for the patient began to construe the simplest and most innocent acts of the young lady in a sense unfavorable to her chastity. Next suspicions and delusions began to develop relating to Mr. X., who in reality had only the greatest good will for the patient. A very curious delusion was evolved in connection with Mr. X. It appears the millionaire had sprung from very humble life and a rumor had gained currency that he once had been an hostler in a livery stable. Our patient had written the millionaire requesting permission to deny this story and had received a reply to the effect that it was not true, but that he, Mr. X., had once owned a livery stable and did not care who knew it; that the people of ——— might say what they pleased, it was their privilege and made little difference to him, etc. Now it appears that this letter had been lost and in the meantime the owner of millions was supposed to have plans to become a candidate for a high elective office, and the above-mentioned letter began to assume great importance in the eyes of the patient (but not otherwise, as far as I know). The patient in the meantime had gone to a beautiful summer resort by the sea, and, while stopping here, his delusions grew and multiplied and branched forth luxuriantly. He presently expressed the idea that Mr. X. did not believe his story of the loss of the

letter, but was possessed by a suspicion that he, the patient, intended to make public use of it in order to injure Mr. X.'s aspirations for office, under the belief that the expression of scorn for the opinion of the people would hurt Mr. X.'s standing with his constituency. This absurd idea led to protestations on the part of the patient that the letter was truly lost, which he appears to have gratuitously supposed Mr. X. did not believe, and presently the patient began to think himself the object of the most diabolical plots to recover the letter or put him in a position where he could do no harm, by capture and deportation, imprisonment, poison, defamation of character, or even murder, if necessary. He also fancied that his personal effects were clandestinely searched and his footsteps dogged by detectives, and that orders were out to secure this important document at any and all hazards. The patient constantly protested his innocence and the truth of the story that the letter was lost, but fancied no one believed him. He became desperate in his apprehensions, taking all efforts made to reassure him and relieve his mind as only so much added deception. Under these circumstances he began to think it necessary to defend his life and he went constantly armed, talked of the danger he was in and when coming to his meals in the public dining room at the hotel, would take a revolver from his pocket and lay it beside his plate loaded and cocked. Under these circumstances he was naturally taken into custody. He was removed to a fashionable hotel in the city where two deputy sheriffs guarded him. He remained here some days attended by his physician and by his beautiful relative. He sought to bribe his guardians by offering \$200 to one of them if he would let him out upon the street with his revolver in order that he might kill Mr. X. and all his enemies. His delusions now spread so as to embrace his doctor and his lady relative. He charged the latter with treachery to himself and, because she followed the doctor from the room to speak with him privately, he cast unworthy imputations upon her character, alleging he heard the two agreeing upon a time and place for an intrigue. This appears to have been the first appearance of auditory hallucinations, which were never markedly developed or were concealed.

At this juncture the patient came under my care. His con-

dition upon admission was as follows: Scarcely any abnormality was shown by physical examination except that some of the nervous reflexes varied considerably from the normal. The knee-reflexes were nearly abolished, the left irregularly giving a sudden jerk, but both sides, as a rule, requiring reenforcement to be even slightly brought out. The pupils were sluggish in reaction to light and accommodation. Some slight irregularity in the outline of the pupils was present, the left seeming slightly wider than the right. Standing with the eyes closed he developed a good deal of swaying and the legs were somewhat clumsy and not well controlled in walking, but no incoordination was present, the patient walking as well with the eyes closed as open and turning well. These, the only physical abnormalities, had raised a suspicion of paresis in his home physician's mind, but were, perhaps, largely to be accounted for by loss of sleep and muscular weakness, nervous agitation and the narcotic drugs employed. Examination of the blood showed a normal specimen. The family history was excellent and there was no indication of specific disease. After admission, further delusions and hallucinations were evolved, and for a month the condition grew worse. The patient began at once to show considerable agitation under the delusion that tuberculous poison had been given him and his lungs were breaking down. He believed that hypodermic injections containing tubercle bacilli were given him at night when he was asleep; that poisonous gases were blown into his room and powders scattered over the bed and furniture which he could distinctly smell. All food and medicine he looked upon with the greatest suspicion, taking only eggs with the shells on, baked potatoes or loaves of bread from which he could, as he thought, extract uncontaminated portions. As he would receive no medicine from us voluntarily, to quiet his fears, and at the same time secure treatment, he was allowed himself, under proper restrictions, to go and get approved prescriptions filled at any drug store he chose and to eat at any place he considered safe. He regarded all the persons around him as parties pro or con to the great conspiracy against him; he thought he heard people talking about him and attached some significance to every look and word. He drew checks and gave them as a reward to those

he thought were working for him, "who could do their entire duty and yet remain 'gentlemen.'" A week after admission he suddenly conceived that his left hand and forearm were paralyzed and complained often of numbness and of hot and cold sensations in his legs and body. He soon ceased to say anything of his lungs being affected, but complained of his stomach, kidneys and bladder. Later there were complaints of pains in the legs and fancied inability to walk. He insisted upon having a carriage to go a couple of blocks.

In less than two months' time a change for the better began to appear. The patient took a good deal of out-door exercise, walking long distances with pleasure; he began to sleep better, voluntarily took hydrotherapeutic treatment at the bath-house; he would have days nearly approaching normal and then for a few days a return of the suspicions and delusions, which, however, showed a substantial abatement and practically disappeared with a sudden ebullition of wrath because he fancied someone had been marking the pages of his Bible. He loudly announced that, if he found it true that anyone had made marks in this sacred book, he would shoot the offender on sight without the least compunction.

As greater clearness and rationality supervened in this case the patient began to show a religious change which seemed at first to be of a morbid character, but later proved to be of the usual and normal type. On seeing a benevolent looking elderly clergyman one day going through the house, he asked for an introduction and from this time gave himself much to religious thought and meditation. He stated that he heard someone saying he had "broken every command of the decalogue." He looked up the ten commandments in the 20th chapter of Exodus and later announced to me that he had at least never borne false witness against his neighbor.

Not long after he informed me that he was making the Golden Rule the rule of his life, and he now began to show a totally different spirit, even toward those he had considered his enemies, at the same time admitting he had been mistaken in his unjust suspicions.

This change of a religious character I regarded with suspi-

cion as being of a morbid character, but on further careful study and observation reached the opinion that it was healthy in its nature. It grew from the natural effect of the afflictive experiences of life which tend to turn the thoughts in a religious direction, the patient feeling keenly the loss by death of his mother, which had occurred shortly before he came under my care. Moreover, as his mental processes became more clear, he began to fully appreciate the disastrous effect which the fact of his mental overthrow must have upon his life, and the position in which such a calamity places its victim before the world. As a result he experienced what is ordinarily termed "a change of heart," turning from earthly troubles to the consolations of religion. He evidenced a most earnest desire to make amends for his past misdeeds and wasted opportunities, and in his daily life and conduct the effect became plainly evident. He spoke of those toward whom he had formerly cherished resentment with entire absence of ill-will and indeed with regard, and sought to prove by his life and actions the sincerity of his purposes in a manner more indicative of mental soundness than of insanity. He very quietly and unostentatiously became a member of the Methodist church, selecting the Methodist church as it was the one in which he had been reared and of which his mother had been a devoted member all her life. There was a certain amount of religious exaltation evident when the patient spoke of these experiences. He mentioned a consciousness of his mother's influence and presence, rolling his eyes heavenward, and I feared there might be something morbid in this until I closely questioned him and found his idea was precisely such as anyone who cherished the orthodox beliefs might entertain of a departed friend being in heaven among the ransomed and angelic hosts and perhaps interceding for some loved one yet on earth. He particularly disclaimed any idea of the visual or auditory phenomena which go to make up insane hallucinations.

In a little less than four months' time after coming under my observation and about one and a half years' time after the first delusions of persecution appeared, this patient was sane. No trace remained of any of the delusions or hallucinations, and he himself recognized them as having been unhealthy and unnatural. His physical condition was normal excepting slight diminution

of the patellar tendon reflex, the other abnormalities, slight in themselves, having disappeared.

I had but little faith in the permanence of this recovery, but have carefully followed the subsequent history of the patient and learn that he is considered by his friends, at this date, 20 months after his return home, to be in good health and to have made an excellent recovery. He is doubtless still hypochondriacal and I do not learn that he is engaged in any regular occupation, but the disappearance of what appeared like chronic systematized delusions unaccompanied by any marked mental weakening is the point I wish to emphasize.

Without going into an elaborate differential study of the above case (which study it is to be feared would result only in bewilderment, such are the variations in the views of different alienists) it may be stated that the essentials of paranoia, slow developments of systematized delusions, without marked intellectual weakening and without extreme affective or emotional disorder, were present and warranted the diagnosis, and in view of the fact that paranoia is agreed to be a psychosis of incurable nature by most writers, the disappearance for nearly two years of all its symptoms seems worthy of record.

NOTE.—Since the above was written, I learn that the patient has continued well and in the summer of 1903 the proceedings by which he was adjudicated insane, were annulled by the court and the patient was reinstated in his civil rights.

NOTES ON MALIGNANT GROWTHS IN THE INSANE.¹

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Realizing the interest taken in the subject of malignant growths, and appreciating the untiring efforts of an honorable profession striving to solve the etiological problems connected therewith, the idea occurred to me—and was approved by Dr. A. E. Macdonald, superintendent of the Manhattan State Hospital, East—that a paper embodying the subject as observed in our hospital might not prove uninteresting for the consideration of the Association.

It was found from examination of the reports of the Manhattan State Hospital for eight years ending September 30, 1896 (where the total number of male and the total number of female patients under treatment were nearly equal, and the total number of male and the total number of female patients who died were also nearly equal), that one patient died from malignant growth for every 418 patients under treatment, and for every 111 patients who died, one died of a malignant growth; also, that the female deaths from malignant growths exceeded those of the male in the ratio of two to one.

In the Manhattan State Hospital, East, which has been until recently the male department of the Manhattan State Hospital, it was found from examination of the records from the beginning that one patient died from malignant growth for every 626 patients under treatment, and for every 217 patients who died, one died of a malignant growth.

The twelfth census of the United States, that of 1900, shows that the death-rate from cancer and tumor is 60 to 100,000 of the population, or 1 to 1,666. However, as cancer is usually a disease of adult life, and especially so in the insane, a comparison of

¹ Read before the 59th Annual Meeting of the American Medico-Psychological Association, at Washington, D. C., May 12-15, 1903.

frequency without allowing for this would perhaps be misleading. As the adult population at large is about two-thirds of the whole, an estimation on this basis would give one death from malignant growth to 1,112 of the general adult population.

It is, therefore, seen that malignant growth is more than twice as frequent among the insane as among the adult population at large, and nearly four times as frequent among the insane compared with the general population.

From the beginning, a total of 31 male patients have died from malignant growths; of this number there were 22 cases of carcinoma and nine of sarcoma, five of the latter being instances of sarcoma of the brain. As many of these cases presented special points of interest, a short detailed description may not prove uninteresting.

One Patient Died of Primary Carcinoma of the Pancreas:

An English laborer, aged 32, an advanced case of paresis of unknown duration, with a history of intemperance. One month prior to his death, he complained of acute abdominal pain; this was followed by profuse bloody diarrhoea. The neoplasm was detected in the region of the pancreas by palpation. He died of perforation of the intestine.

Two Patients Died of Epithelioma Originating in the Mucous Membrane of the Jaw:

One, a colored waiter, aged 39, who suffered from chronic mania for eighteen years.

The other, an artist, aged 45, a native of the United States. He was a demented patient who had had epilepsy for two and a half years.

Both were untidy in their habits and the latter had a history of specific disease. The growth originated three weeks prior to death in the first case, and eight months in the latter. Both died of sapraemia and exhaustion.

Two Patients Died from Epithelioma of the Base of the Tongue and Pharynx:

One, a German, aged 48, of unknown occupation, an advanced case of dementia, with no definite information as to the previous form of insanity, or of the duration of the growth.

The other, a German merchant, aged 49, of intemperate habits,

Sketch

a case of dementia following melancholia. In this case the growth appeared $8\frac{1}{2}$ months before death, and the insanity four months later, the former being the assigned cause of the latter.

Both died from sapraemia.

One Patient Died of Carcinoma of the Left Orbit:

A Canadian draper, aged 52. He had been operated upon $6\frac{1}{2}$ weeks before admission, his insanity dating from that time. He was a case of acute mania merging into dementia. Death occurred on the day after admission. The duration of the growth could not be determined.

One Patient Died of Epithelioma of the Side of the Tongue:

A Swiss, aged 52, a demented paretic with a history of specific disease which was the assigned cause of his insanity. Paresis had existed $1\frac{1}{2}$ years before the development of the growth, and the patient died four months after its first appearance.

Two Patients Died of Epithelioma of the Face:

One, an Irish tailor, aged 53, of intemperate habits, a case of senile dementia of over five years' duration; the other, a French merchant, aged 68, of intemperate habits, suffering from dementia secondary to melancholia of three years' duration. In both cases the growth developed six weeks prior to death; in both it was very painful and bled easily, and both showed evidence of arterial degeneration of the brain. The immediate cause of death in both cases was exhaustion. The former patient suffered during the last three years of his life from convulsions of an epileptiform character.

Two Patients Died of Epithelioma of the Penis:

One, an Italian waiter, aged 62, a paretic of over three years' duration. The growth developed one month prior to death. The other, an Irish laborer, aged 50, who had undergone privations and been in the almshouse. He was suffering from senile dementia of unknown duration. The growth developed four months prior to death, and was said to have followed chancroid. He showed evidences of arterio-fibrosis with kidney involvement.

The first patient died of sapraemia, the second of uraemia.

Three Patients Died of Carcinoma of the Rectum:

One, an Irish laborer, aged 75, of temperate habits, a case of

senile dementia of three years' duration. He was hemiplegic and had suffered from epilepsy for twenty-five years. The growth developed one month prior to death.

The second, an Italian laborer, aged 35, of temperate habits, a case of acute mania, passing into dementia, although he had recovered from a previous attack three years before. The carcinoma, following fistula in ano, developed one month prior to death,

The third case occurred in an Irishman, aged 40, a demented imbecile of no occupation. The growth developed six weeks prior to death.

These three cases were similar in the rapid development of the growth, and in the excitement, restlessness and irritability which attended the insanity. All three died of sapraemia.

Two Patients Died of Primary Carcinoma of the Liver:

The first, a laborer, aged 30, a native of the United States, with a history of arterial disease in his mother. He was a case of simple melancholia of unknown duration, who had begun to show symptoms of dementia. Upon admission, he presented evidence of enlargement of the liver, followed by vomiting, ascites and jaundice. He died 2½ months later of exhaustion.

The other, a French Hebrew, aged 47, an hotel messenger, who had been insane for twenty years, worry being assigned as the cause. He suffered from dementia, secondary to acute mania. The entire surface of the body, except the face and scalp, was covered with eczema, from which he had suffered for years. Two months prior to death he developed symptoms of carcinoma of the liver, jaundice, vomiting, loss of appetite, and diarrhoea. The immediate cause of death was sapraemia.

Two Patients Died of Epithelioma of the Lower Lip:

One, an Irish carpenter, aged 54, who suffered from dementia, secondary to melancholia, of over five years' duration, for which intemperance was the cause assigned. The growth began to develop four years prior to death, the immediate cause of which was exhaustion.

The other case was an English peddler, aged 42, of temperate habits, whose parents both died of asthma. He was a case of acute mania, progressing rapidly into dementia. In this case the

growth and insanity developed simultaneously, the former being the assigned cause of the latter. The immediate cause of death, which occurred four weeks after the first appearance of the growth, was sapraemia.

Four Patients Died of Primary Carcinoma of the Stomach:

One, a colored patient, aged 20, a native of the United States, of no occupation. He was a case of acute melancholia of unknown duration, which had passed into dementia. Three weeks prior to death, the immediate cause of which was exhaustion, he presented symptoms of carcinoma of the stomach. The growth infiltrated the liver and pancreas.

The second was a German baker, aged 60, of very intemperate habits, who suffered from senile dementia, the exact duration of which (covering a period of years) was indefinite. He presented symptoms of valvular heart disease and general arterio-fibrosis. The duration of the growth could not be determined. He died of gastric hemorrhage.

The third patient was a German driver, aged 61, of slightly intemperate habits, who suffered from pulmonary tuberculosis. The insanity and symptoms of the growth appeared simultaneously five weeks prior to death, the immediate cause of which was exhaustion.

The fourth patient was an Irish groom, aged 42, a moderate drinker, who suffered from chronic melancholia of two years' duration. Three months previous to death, the immediate cause of which was exhaustion, he presented symptoms of gastric cancer.

These four cases were similar in the rapid development of the growth; all were cases of agitated melancholia, merging rapidly into dementia, and the insanity in all was characterized by gloominess and depression, suicidal tendencies, delusions of persecution, and vivid hallucinations.

One Patient Died of Sarcoma of the Left Breast:

An Irish cooper, aged 68, of intemperate habits. He suffered from dementia, secondary to melancholia, of 20½ years' duration; the melancholia followed a left-sided hamiplegia. The tumor was said to have existed many years, but its duration could not be definitely determined. One month prior to death, it began to ulcerate causing intense pain, and he died of exhaustion.

One Patient Died of Sarcoma of the Right Shoulder:

An Irish salesman, aged 47, who suffered from dementia, secondary to chronic mania and epilepsy of $7\frac{1}{2}$ years' duration, and who had suffered from an attack of insanity eight years previously. The causes assigned were syphilis, domestic worry and masturbation. Three years prior to death, a sarcoma of the shoulder developed, involving the entire deltoid muscle. A very painful ulceration began in the neoplasm, and the patient died of sapraemia three weeks later.

One Patient Died of Sarcoma of the Liver:

A native of the United States, aged 24, an electrician of intemperate habits, who suffered from dementia secondary to acute mania. His father died of apoplexy. Four months prior to death, he became jaundiced, suffered from pain in the region of the gall-bladder, the liver enlarged, ascites supervened, the temperature rose, vomiting and occasional nose-bleed followed. He died of general oedema and exhaustion.

One Patient Died of Osteosarcoma of the Left Knee:

An Irish laborer, aged 44, who had been an inebriate. He was a demented epileptic of the maniacal type. His insanity had existed for more than nine years. The sarcoma existed for more than nine years also, but the exact duration could not be determined. During the last two months of his life, his physical condition failed and the neoplasm enlarged. He died of exhaustion.

Five Patients Died of Primary Sarcoma of the Brain:

Three cases were instances of single and two of multiple sarcomata. All were demonstrated by autopsy. The first, in a man aged 40, originated in the dura mater over the sella turcica, and was a small round-celled sarcoma. The second in a man aged 51, originated in the cerebral falx adjacent to the parietal lobe, and was about 38 millimeters in diameter. The third, in a man aged 34, was a multiple fibrosarcoma of the dura. The larger tumor, 38 millimeters in diameter, was situated near the left Sylvian fissure; the smaller, 12 millimeters in diameter, was situated over the superior occipital convolution near the vertex. The fourth was also a multiple growth of the round spindle-celled variety in a colored patient aged 30. The larger tumor, 40 millimeters in diameter, originated in the falx cerebri adjacent to the first fron-

tal convolution, the smaller one from the same structure and was situated immediately alongside of the larger. The fifth occurred in a man aged 57, and was a small round-celled sarcoma, 80 millimeters in diameter, originating in the falciform process of the dura over the crista galli.

The insanity in these five cases was of short duration, varying from $3\frac{1}{2}$ months to $2\frac{1}{4}$ years, and was apparently due directly to the presence of the neoplasm. The nature of the insanity in all the cases was much the same and was characterized generally by marked depression, suicidal tendencies, delusions of suspicion, and stuporous states passing into dementia.

In addition to the focal symptoms, which varied with the location of the growth, the principal general symptoms observed were epileptiform convulsions coming on in adult life, a dazed feeling in the head, more pronounced at times than at others, with disturbances of equilibrium, progressive weakness of the lower limbs with a tendency for the legs to give way, the patient falling down helpless, general progressive emaciation of the body, and a wild staring expression of the eyes, with slight exophthalmos and occasional nose-bleed—the last mentioned group being due to the intracranial pressure.

The association of cancer and tuberculosis has been a subject of considerable inquiry. In some cases the one or other preceded and instances have been cited where the two processes existed at the same time in the same glandular structure and it was difficult or impossible to determine the primary disease. Cancerous persons have been believed by some to be the survivors of tubercular families. Of the cases cited three of cancer and one of sarcoma were associated with pulmonary tuberculosis. In all the cancer cases tuberculosis existed prior to the development of the cancer. In one case, the father also suffered from phthisis. In the sarcoma case the history was too indefinite to accurately determine the precedence; the indications, however, pointed to the primary existence of the neoplasm.

In three cases cancer developed in the course of paresis. One patient had a definite specific history, but in all paresis antedated from one and one-half to three years the development of the neoplasm.

Three cases of cancer and one of sarcoma presented definite

histories of specific disease, although it was highly probable that this number represented only a small proportion of those actually affected, particularly with reference to the cancer cases. The growth in all, however, appeared several years after the primary infection.

Epilepsy existed in two cases of cancer, and in two cases of sarcoma. In all the cases it preceded the development of the neoplasm by from two to twenty-five years.

The association of epilepsy and specific disease existed in one case of cancer and one case of sarcoma. In both, these affections had existed for several years before the development of the neoplasm.

The average age at death of the cancer cases was 48 years, of the sarcoma cases 43 8-9 years. This would seem to indicate that death from cancer occurs at an earlier age in the insane as compared with the population at large. The civil condition presented a marked contrast; 67.7 per cent of the cancerous cases were single men, whereas 60 per cent of the sarcoma cases were married. Intemperance in the use of alcohol and tobacco was particularly noted in the cases observed, but was a much more prominent feature in those dying from cancer.

The question of heredity has always been considered an important one. This, however, did not assume prominence in the cases observed. In not a single instance was a history of death from cancer or sarcoma in the ancestry obtainable.

It is worthy of note that in those dying of cancer the blonde and brunette types were equally distributed, whereas in the sarcoma cases (with one exception, who was a colored patient), all were of sanguine temperament with light complexions and blue eyes, and mostly of the plethoric type. With one or two exceptions they were strong, active able-bodied men, and particularly so in all the cases of sarcoma of the brain.

The diseases from which they had previously suffered were those incident to plethora—epilepsy, apoplexy, cardiac disease, articular rheumatism. The same class of diseases was traceable in the ancestry and presented somewhat of a contrast to those encountered in the cancer cases, which were principally phthisis, asthma, syphilis, cirrhosis of the liver and kidneys, arteriofibrosis and paresis.

Impressed by the fact that mesoblastic and epiblastic growths appear to bear some relation to the nutritive and secretory activities of the organism—the former occurring, as a rule, in middle-aged, active, able-bodied individuals of sanguine temperament at the beginning of a decline in the nutritive functions; the latter occurring later in life when senile changes have begun, and the vigor of the epithelial structures is passing—and especially impressed by the fact that malignant growths run a more rapid course and occur with greater frequency in the insane, who lack inhibitory control, and in the debilitated; and that cancer occurs more frequently in those whose glandular structures are approaching their functional decline, it occurred to me to inquire whether the tissue changes resulting in an overgrowth were not fundamentally conservators of function to compensate for the waning vigor. The cellular-tissue elements are stimulated by toxic juices rich in substances generated by retrograde metabolic changes, and undergo hyperplasia. The energy of this overgrowth is errant by reason of the failing inhibitory control, and, in some instances, is perhaps whipped into activity by local irritations, congestions or inflammations. A development *ad libitum* results and uses up all the remaining nutritive powers of the organism to sustain a wanton effort.

If, therefore, the insane suffering from malignant growths, and who present to such a pre-eminent degree those well-recognized evidences of lost inhibitory control associated with grave metabolic tissue changes, were systematically studied, could we not hope to solve the mystery which thus far has cast its shadow upon the achievements of modern medicine?

Case.	Age.	Place of birth.	Occupation.	Nature and primary location of growth.	Primary form of insanity.	Duration of insane life.	Duration of growth prior to death, from first symptoms.	Autopsy notes.
1	32	England.	Laborer.	Carcinoma of pancreas.	Paresis.	Unknown.	4 weeks.	No autopsy.
2	39	U. S. (colored).	Walter.	Epithelioma of mucous membrane of jaw.	Chronic Mania.	18 years.	3 weeks.	No autopsy.
3	45	U. S.	Artist.	Epithelioma of mucous membrane of jaw.	Melancholia (Epilepsy).	2½ years.	8 months.	Body extremely emaciated, pale and waxy. Brain soft; membranes oedematous. Cerebral arteries pale, waxy and thickened. Heart small and atrophied. Liver soft and pulsatious. Kidneys show early stage of parenchymatous nephritis. Temporal muscles of right side completely absorbed. Nothing of scalp left but deep fascia. No fat in body anywhere. General ischemia of organs and tissues. Scarcely any blood in body or organs. Large circular opening in right cheek, about 70 millimeters in diameter, exposing buccal cavity. Buccal and nasal cavities infiltrated with cancerous growth; abscess cavity in right cervical region. Right side of nose ulcerated due to cancerous discharges. Brain not examined. Body extremely emaciated. Congestion and edema of lungs. Fatty degeneration of heart. Liver congested. Spleen enlarged and degenerated. Both lungs adherent to pleura. Old pericarditis and peritonitis. Mesenteric glands enlarged. Tongue and pharynx infiltrated with the cancerous growth.
4	48	Germany.	Unknown.	Epithelioma of base of tongue and pharynx.	Unknown.	Unknown.	Unknown.	

Case.	Age.	Place of birth.	Occupation.	Nature and primary location of growth.	Primary form of insanity.	Duration of insane life.	Duration of growth prior to death, from first symptoms.	Autopsy notes.
5	49	Germany.	Merchant.	Epithelioma of base of tongue and pharynx.	Acute Melancholia.	8½ months.	4 months.	No autopsy.
6	52	Canada.	Draper.	Carcinoma of left orbit.	Mania.	6½ weeks.	Unknown.	Brain softened. Pachymeningitis. Sinuses filled. Corpora striata very soft. Choroid plexus disintegrated. Lungs congested. Spleen enlarged. Kidneys cirrhotic. Degeneration of anterior ⅓ of left temporo-sphenoidal lobe due to congenital squint of left orbit.
7	62	Switzerland.	Druggist.	Epithelioma of side of tongue.	Paresis.	Unknown.	4 weeks.	No autopsy.
8	53	Ireland.	Tailor.	Epithelioma of face.	Senile Dementia.	5 years.	6 weeks.	No autopsy.
9	68	France.	Merchant.	Epithelioma of face.	Senile Dementia.	3 years.	5 weeks.	No autopsy.
10	62	Italy.	Waiter.	Epithelioma of penis.	Paresis.	Over 3 years.	1 month.	No autopsy.
11	50	Ireland.	Laborer.	Epithelioma of penis.	Senile Dementia.	Unknown.	4 months.	Body extremely emaciated, pale and waxy. Brain, wet, soft and ischaemic. Ventricles filled with blood. Vessels white and transparent. Basilar thickened and fatty. Cortex oedematous, convolutions atrophied and sulci distended. Old pleuritic adhesions to both lungs. Calcareous patches on aortic valves. Kidneys congested. Body very ischaemic, scarcely 500 cc., in entire body and most of this in liver. Penis is seat of cancerous cauliflower growth.

Case.	Age.	Place of birth.	Occupation.	Nature and primary location of growth.	Primary form of insanity.	Duration of insane life.	Duration of growth prior to death, from first symptoms.	Autopsy notes.
12	75	Ireland.	Laborer.	Carcinoma of rectum.	Melancholia (Epilepsy).	25 years.	1 month.	No autopsy.
13	36	Italy.	Laborer.	Carcinoma of rectum.	Acute Mania.	2 months.	1 month.	No autopsy.
14	40	Ireland.	None.	Carcinoma of rectum.	Dementia.	Life.	6 weeks.	No autopsy.
15	30	U. S.	Laborer.	Carcinoma of liver.	Imbecility.	Unknown.	Over 2½ mos.	No autopsy.
16	47	France.	Hotel Runner.	Carcinoma of liver.	Chronic Mania.	30 years.	2 months.	Body extremely emaciated. Brain presented no macroscopic lesions. Aorta adhesions to left lung at apex and posteriorly. Old cicatrix at apex. Pleuritic adhesions to right lung posteriorly. Spleen enlarged. Patches of atheroma in capsule. Kidneys cirrhotic. Liver hard and contracted and completely infiltrated with the cancerous growth. Section showed numerous abscess cavities filled with pus. No autopsy.
17	42	England.	Peddler.	Epithelioma of lower lip.	Acute Mania.	4 weeks.	4 weeks.	No autopsy.
18	54	Ireland.	Carpenter.	Epithelioma of lower lip.	Melancholia.	5 years.	4 years.	Brain soft. Membranes thickened and congested. Left lung adherent to pleura. Stomach, liver and peritoneum infiltrated with the cancerous growth.
19	20	U. S. (colored).	None.	Carcinoma of stomach.	Acute Mania.	Unknown.	3 weeks.	No autopsy.
20	60	Germany.	Baker.	Carcinoma of stomach.	Senile Dementia.	Many years (indefinite).	4 weeks.	Brain not examined. Lungs tubercular. Retroperitoneal glands enlarged. Scirrhus carcinoma surrounding cardiac orifice of stomach extending up the oesophagus about one inch and extending down on stomach two inches, principally along lesser curvature.
21	61	Germany.	Driver.	Carcinoma of stomach.	Acute Melancholia.	5 weeks.	5 weeks.	

Case.	Age.	Place of birth.	Occupation.	Nature and primary location of growth.	Primary form of insanity.	Duration of insane life.	Duration of growth prior to death, from first symptoms.	Autopsy notes.
22	43	Ireland.	Groom.	Carcinoma of stomach.	Chronic Melancholia.	2 years.	3 months.	Brain not examined. Body extremely emaciated. Calcareous degeneration of aortic valves. Mesenteric glands enlarged. Carcinoma involving pyloric end of stomach, duodenum, liver, both kidneys, pancreas and adjacent structures all bound down to vertebral column in one hard, unyielding mass.
23	66	Ireland.	Cooper.	Sarcoma of left breast.	Melancholia.	20½ years.	Many years (indefinite).	Brain not examined. Lungs tubercular. Fatty degeneration of heart muscle. Both kidneys showed chronic parenchymatous nephritis. Sarcoma nearly the size of a man's head upon the left side of breast involving the intercostal muscles and tissues down to the sternum and ribs. The neoplasm was very hard and presented an area of degeneration.
24	47	Ireland.	Salesman.	Sarcoma of right shoulder.	Chronic Mania.	7½ years.	3½ years.	No autopsy.
25	24	U. S.	Electrician.	Sarcoma of liver.	Acute Mania.	4 years.	4 months.	Body intensely jaundiced, weight 106 lbs. Beginning pachymeningitis on internal surface of dura in temporal fossae. Choroid plexus cystic. No fluid in ventricles or meninges. Brain convolutions well formed. Vessels not atheromatous. Heart muscle soft, valves and aorta normal. Spleen enlarged and congested. Kidneys congested. Peritoneal cavity contained 2100 cubic centimeters of bile-stained fluid. Weight of liver 2225 gms. There was a large

Case.	Age.	Place of birth.	Occupation.	Nature and primary location of growth.	Primary form of insanity.	Duration of insane life.	Duration of growth prior to death, from first symptoms.	Autopsy notes.
								sarcoma (encapsulated) growing from the great fissure about the gall-ducts, and originating in the connective tissues; it had not undergone degeneration. Weight of neoplasm disencapsulated, 300 gms., extremely vascular and softened about borders.
26	44	Ireland.	Laborer.	Sarcoma of left knee.	Mania (Epilepsy).	Over 9 years.	Over 9 years.	No autopsy.
27	40	U. S.	Laborer.	Sarcoma of brain.	Acute Melancholia.	9 months.	Unknown.	Body that of an able-bodied man, somewhat emaciated. Brain membranes congested. Sinuses filled with blood. Brain softened. Small, rounded sarcoma originating in dura mater over the sella turcica. Beginning atheroma of aorta and pulmonary arteries. Kidneys congested.
28	51	Ireland.	Ship Caulker.	Sarcoma of brain.	Acute Melancholia.	6 months.	Unknown.	Body that of an able-bodied man, somewhat emaciated. Brain membranes congested. Sinuses filled with blood. Brain softened, markedly so in region of tumor. Sarcoma 38 millimeters in diameter originating in the falx cerebri adjacent to the parietal lobe. Surface of convolutions flattened and showed evidences of pressure. Lungs cedematous; other organs normal.
29	34	Germany.	Baker.	Sarcoma of brain.	Acute Melancholia.	1 year.	Unknown.	Body that of an able-bodied man, somewhat emaciated. Brain membranes congested. Convulsions flattened. Multiple fibrosarcoma of the dura; the larger 38 millimeters in

Case.	Age.	Place of birth.	Occupation.	Nature and primary location of growth.	Primary form of insanity.	Duration of insane life.	Duration of growth prior to death, from first symptoms.	Autopsy notes.
30	30	U. S. (colored).	Porter.	Sarcoma of brain.	Acute Melancholia.	3½ months.	3½ months.	diameter situated adjacent to the left sylvian fissure; the smaller 12 millimeters in diameter situated over the superior occipital convolution near the vertex. Brain structures softened about region of tumor. Other organs apparently normal.
31	37	Germany.	Tailor.	Sarcoma of brain.	Acute Melancholia.	2½ years.	11 years.	Body that of an able-bodied man, somewhat emaciated. Multiple round spindle-celled sarcoma of the dura; the larger 40 millimeters in diameter; originating in the falx cerebri adjacent to the first frontal convolution. The smaller one from the same structure situated immediately alongside of the larger. Brain structures softened about region of tumor. Other organs apparently normal.
								Body that of an able-bodied man, somewhat emaciated. Brain convolutions flattened from intracranial pressure. Membranes congested. Small, round-celled sarcoma of the dura, 80 millimeters in diameter originating in the falx cerebri. Tumor under the crista galli. Tumor undergoing degeneration near its attachment to falxiform process. Heart muscle soft. Atheroma of thoracic and abdominal aorta.



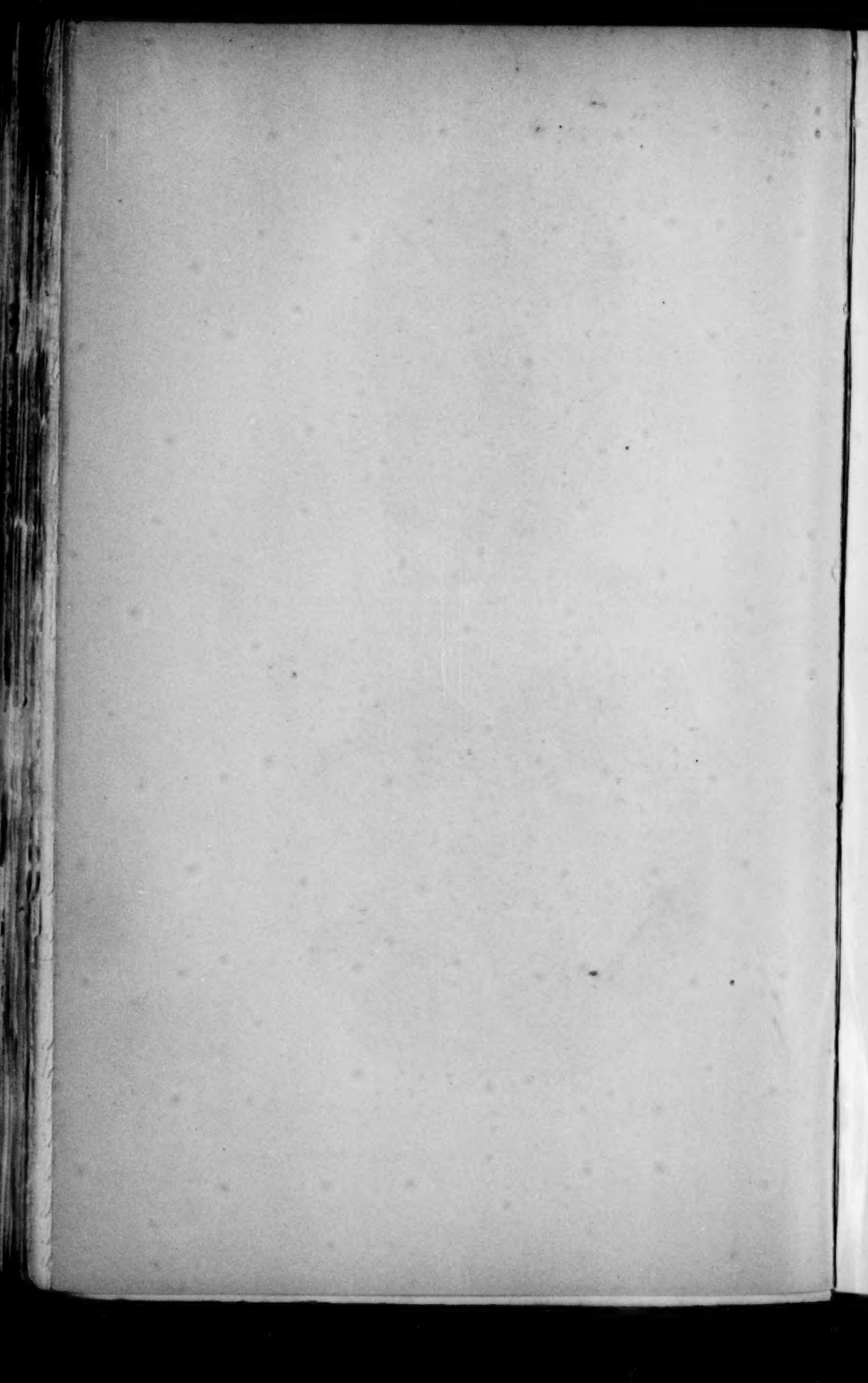


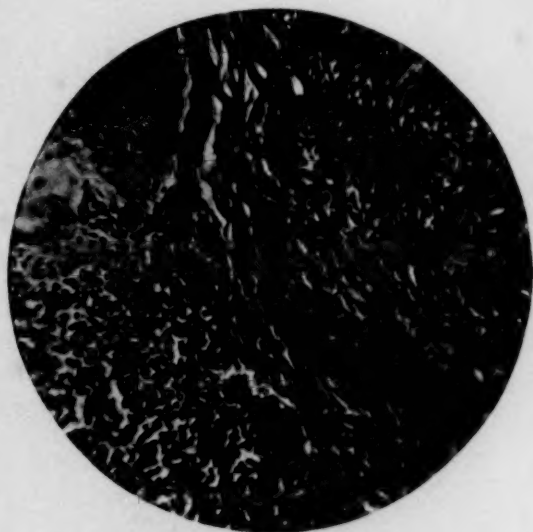
Showing extensive ulceration of the cheek and nose and enlargement of the cervical lymphatic glands in a case of epithelioma of the mucous membrane of the jaw, occurring in a demented epileptic, with definite syphilitic history.



Epithelioma of the mucous membrane of the jaw.

TO ILLUSTRATE DR. JOHN RUDOLPH KNAPP'S PAPER.





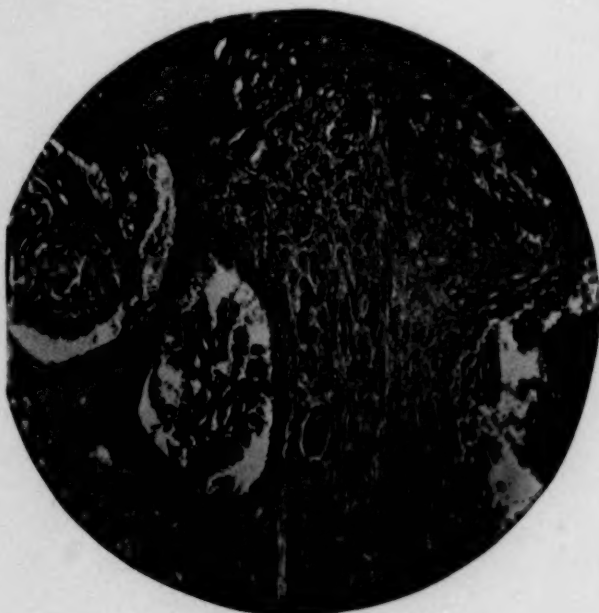
Small Round Celled Sarcoma.



Sarcoma of the Liver.

TO ILLUSTRATE DR. JOHN RUDOLPH KNAPP'S PAPER.



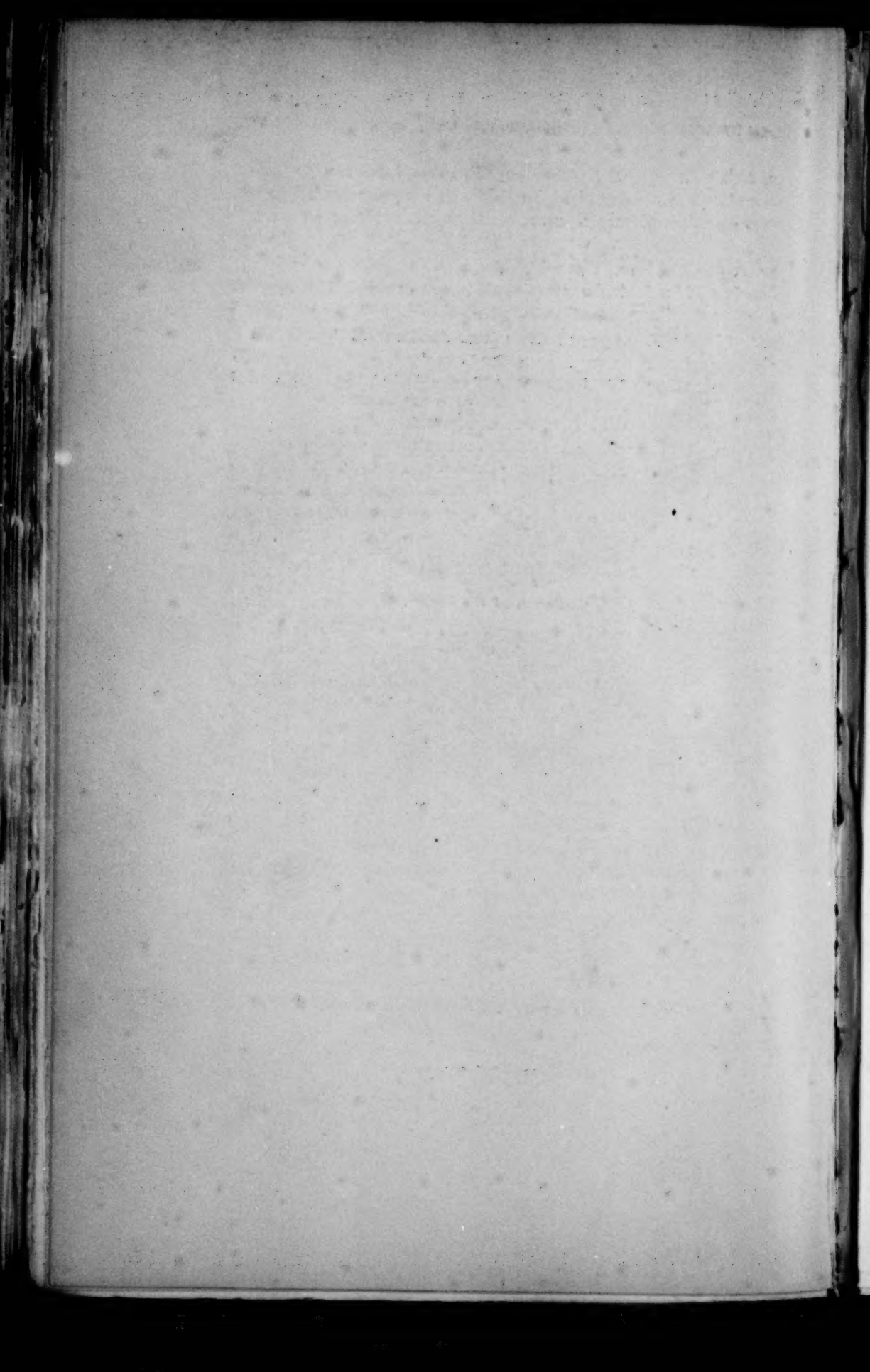


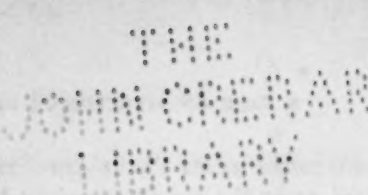
Carcinoma of the Kidney.



Carcinoma of the Stomach.

TO ILLUSTRATE DR. JOHN RUDOLPH KNAPP'S PAPER.





A REPORT OF A CASE OF MYOCLONUS EPILEPSY.

By IRWIN H. NEFF, M. D.,
Pontiac, Mich.

"The term 'epilepsy' is applied to groups of symptoms, and to diseases which anatomically and pathologically are extremely disparate. In fact, at the present day, it should not be given any anatomical significance whatever. To show the difficulty of conveying in a few words an adequate idea of the disorders indicated by the term 'epilepsy,' the reader is reminded that a large portion of all cases of dual personality are manifestations of epilepsy; that most cases of 'dreamy states' of consciousness are in reality evidences of the epileptic neurosis; that cortical irritation—whether it be due to growth in the substance of the cortex or to pressure from without—is manifested by the phenomena of epilepsy; and finally that the large class of cases which were designated as general and essential epilepsy—meaning thereby a profound neurosis, whose most conspicuous symptom is an eclamptic or convulsive attack—are all included under this one head."

This excerpt from Collins¹ is significant of the fact that the syndrome we term "epilepsy" is truly a symptom-complex.

Motor disturbances in the inter-paroxysmal state of an epileptic are not uncommon, and it is not surprising that it has been found that "myoclonus" is seen in epilepsy, either alone or associated with the seizures. The excellent and complete paper by L. Pierce Clark and T. P. Prout² on "The Nature and Pathology of Myoclonus Epilepsy" leaves but little to be said concerning the disease. The authors establish quite clearly the fact that the association of the two symptoms (epilepsy and myoclonus), although rare, is sometimes seen; and that this association gives rise to a characteristic syndrome. As has been stated above, many epileptics show

¹ The Treatment of Diseases of the Nervous System, by Joseph Collins, p. 441.

² American Journal of Insanity, Vol. 59.

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an inter-paroxysmal motor disturbance, and it is possible that in some of these cases the condition might have been a myoclonus, but, owing to the rarity of the disease, it may have been overlooked.

Before reporting the case which forms the subject matter of this paper, I desire to report three cases, which should be placed in the group of "myoclonic disturbances in epilepsy."

CASE I.—J. E. (author's case) ; male ; age 32. Admitted to the Eastern Michigan Asylum October 14, 1902. No history of his life previous to admission could be obtained. The patient's mental symptoms corresponded to those of mental enfeeblement, and the syndrome was not suggestive of an epileptic psychosis. Auditory hallucinations of a persecutory type were in evidence. Optimism, however, was quite constant, although changes in the emotional tone were occasionally seen.

On November 27, 1902, the patient had a convulsion of the "grand-mal" type, followed by stupor. On December 5 of the same year he had one severe and one light seizure, of a classical type, followed by a degree of confusion. On December 11, 1902, following a period of 48 hours of irritability and religious enthusiasm, clonic spasms involving the muscles of the legs, arm, trunk and face developed, continuing for four hours without obscuration of consciousness. The patient had no control over the spasms, could talk quite coherently about his condition, and complained of pain extending over the convulsed area. During the attack exaltation of the tendon reflexes was noted, and any attempt to elicit the same caused a marked increase in the severity of the convulsions. On two occasions since then, patient has had a repetition of the attack. On another occasion the myoclonic symptoms developed after a severe and typical epileptic seizure.

Since his commitment—that is, previous to May 8, 1902—the patient has had nine seizures of the "grand-mal" type without myoclonic symptoms ; one attack of myoclonus alone ; two attacks when the myoclonus preceded, and one when the symptoms followed a severe epileptic attack. The myoclonic convulsions were in all instances of the same nature and involved the same area, with a maximum duration of four hours.

The above case shows that myoclonus may occur as a pre- or

post-epileptic phenomenon, or may develop instead of the classical attack.

CASE 2.—S. W. R.; male; age 30. Admitted to the Eastern Michigan Asylum March 22, 1886.

Hereditary History.—Father was "peculiar" and died of a cancer. One brother was an "epileptic imbecile."

Previous History.—History of epilepsy dates from childhood. Attacks have been of the "grand-mal" type, the mental equivalents consisting of amnesia and automatism occurring several times.

At the time of his admission to the hospital no localized physical trouble was found. The general nutrition was somewhat disordered, as found in cases of prolonged and aggravated epilepsy, and characteristic dementia was well advanced. A few severe convulsions of the "grand-mal" type occurred during the first six weeks of residence at the asylum. In April, 1886, it was noted that the patient had on several occasions suffered from irregular epileptic attacks. He located the trouble in the neck and at the root of the tongue. It was ushered in by a "burning sensation," which was soon followed by the occurrence of a "convulsion." This consisted of an attack of hiccough, which occurred at intervals of a minute or so. During the attack, the tongue was protruded violently from the mouth, which was at the time thrown open. This was accompanied by "explosive" crying. Simultaneously with this, the head was thrown backward by a sudden contraction of the muscles of the back and head. He did not lose consciousness during the attack, but was able to converse and to describe his feelings during the intervals. One such an attack was ushered in by an application to the mucous membrane of the nose of a solution for the relief of a catarrhal condition. These attacks continued to occur at intervals, but marked improvement was obtained by the use of bromides. Attacks of petit- and grand-mal developed independently of myoclonic symptoms. The patient succumbed to pneumonia, occurring after ordinary status epilepticus, during May, 1894. For the three years preceding death, no note is found of the occurrence of any myoclonic symptoms.

This case shows that myoclonic symptoms develop in idiopathic

epilepsy late in the existence of the disease, and can be regarded as a variation in the type of the convulsion.

CASE 3.—E. D.; male; age 9. Admitted to the Eastern Michigan Asylum, August 7, 1883.

Previous History.—Has had epilepsy since 18 months of age. No history could be obtained as to the probable cause of the disease, or the characteristics of the attacks. The examination on admission showed some disorder of nutrition; but there was no evidence of any bodily defect. The mental symptoms corresponded to those of imbecility. Mental reduction, however, was not extreme. On the day of admission the patient had sixteen seizures, during which he became confused and would grind his teeth. No convulsive movements were noted, and there was no loss of consciousness. A month after admission, a note is made to the effect that he had had upwards of 100 seizures, during which there was no loss of consciousness, and the usual epileptic phenomena were not in evidence. The flexor muscles of the arms and legs during the attacks were in a state of clonic spasm, and were the only ones affected. During May, 1884, according to the report, the convulsions had grown more severe in character; and, owing to violence of the contractures, he had often been thrown down, striking the back of his head. On one occasion a large hematoma involving the entire occiput had developed. Seizures of the character mentioned above alternated with the classical seizures of epilepsy.

In 1889, there is a description of an attack,¹ with the following symptoms:

“For a period of six or eight hours the legs and arms were in almost constant motion. He had no power to control his movements. Generally an arm or leg would be picked up and apparently thrown aimlessly about the bed. The patient would clench his hands, and strike his face or strike the wall forcibly. These symptoms continued for eight hours, during which time there was no loss of consciousness.”

A note made in March, 1890, would indicate the occurrence of a dermatosis after the convulsion. This condition was one of erythema, which often appeared after the attacks, involving both

¹ Description of attacks obtained from the records, by Dr. E. A. Christian.

hands. It was sometimes observed on the face, and occasionally involved the ears. It is also reported at this time that peripheral irritation on several occasions precipitated an attack.

In February, 1892, according to the records, during the previous year the patient had been in bed, owing to progressive asthenia in consequence of attacks. Many seizures of the "grand-mal" type now occurred, and the frequency of the myoclonic spasms appeared to be considerably lessened.

As showing the frequency of the attacks during the three years, the following report is made: During 1890, the monthly average of convulsions was 267; in 1891 it was 246; and in 1892 it was 183. From this time until his death, in September, 1893, the patient was bed-ridden, and there was emaciation, which was due to the progressive exhaustion in consequence of the frequency and severity of the attacks.

There can be no question that in this case we have an anomalous case of epilepsy. The case was probably one of "myoclonus epilepsy," which was at that time not recognized. The occurrence of the "myoclonic" attacks independently of the typical epileptic seizures—the two alternating with varying frequency—is convincing of the fact that the two syndromes may occur independently and may have the same source of origin.

CASE 4.—A. P. (writer's case); male; age 20; single; American. Admitted to the Eastern Michigan Asylum, February 7, 1902.

Hereditary History.—There is apparently a defect, although this is evidenced mainly in a family neurotic tendency in the maternal side. The mother is considered "nervous"; one brother is a pugilist, one a vaudeville performer and another a professional ball-player. All the children have some vagaries of conduct and indecision in manner.

Previous History.—The patient is no exception to the rule. At an early age he showed the family characteristics and also exhibited criminal tendencies. At the age of 14, in a spirit of bravado, he drank almost a pint of cheap whiskey, and had an attack of severe, acute gastritis; and after 72 hours of persistent vomiting, he experienced an attack of myoclonus, involving the muscles of the legs. The attack is described as a series of "clonic spasms," continuing for two days. The legs were thrown violently about,

and the patient had no control over his movements. There was perfect retention of consciousness and no mental clouding. After the attack he continued to drink to excess, and three months afterwards experienced a classical epileptic seizure.

During the first year of his illness, myoclonic spasms of the original character developed about once a month. Grand-mal attacks occurred about once every six weeks, and were of the usual type. At the beginning of the second year the patient noticed that the myoclonus involved the arms, and in a short time the muscles of the face and back were also involved in spasms. The attack occurred without any apparent exciting cause, and while it lasted the patient was totally incapacitated. During the first two years he continued to drink, was frequently intoxicated, and had several attacks of delirium tremens. Several times he was arrested for drunkenness and vagrancy, and committed to penal institutions, where he has served specified terms. He was then committed to the Home for Feeble-minded, and, on February 7, 1902, was transferred to the Eastern Michigan Asylum.

At the time of transfer it was stated that during the past six months attacks of grand-mal type and clonic symptoms had occurred quite frequently—the patient being free from clonic spasms only a few days during the week.

Examination at the time of admission showed a marked disorder of equilibration and gait. Owing to the violence of the spasms in the leg muscles, he would at times be thrown violently to the floor. The area involved included muscles of the arm, neck, face and abdomen. Owing to spasms of the masseters, even the speech was occasionally jerky, but the laryngeal muscles did not seem to be involved. The muscular contractures were short and lightning-like, but not symmetrical. The tendon, organic and superficial reflexes were markedly exaggerated, and any attempt to evoke the same resulted in spasms. The patient complained of weakness, due to the violence of the spasms. Physical signs of degeneration consisting of cranial, facial and palatal deformities were found. Examinations of respiratory, circulatory, digestive and abdominal organs were of negative value. The mental symptoms were those of an original defect. There were moral insensibility, an inordinate vanity, an ill-balanced impulsiveness and an inferior intelligence.

The patient has been under observation for fifteen months, and during that time he has had numerous attacks of myoclonic spasms, and twenty-five seizures of the grand-mal type. These attacks have occurred independently, and have never been found associated. Status myoclonus has developed twice, and on both occasions symptoms of exhaustion have appeared, but have not been of serious import.

The patient is at times apparently free from myoclonic spasms, and a marked subsidence has been frequently produced by the judicious use of bromides. During the remission, the patient, having some talent for drawing, is able to execute this with ease. He has also written many letters, and no irregularity has been noted in the character of his penmanship. During the "bad days," when the myoclonus is present, the patient frequently falls, and has sustained, in this way, many cuts and bruises. When spasms are extreme, it is necessary to keep the patient in bed, in order to prevent serious injuries. The patient states that he is never entirely free from spasms, as often when he appears to be quiet and when no convulsion can be observed, he is conscious of fibrillary contractions of the muscles.

The character of the myoclonic spasms has undergone no change since the patient has been under observation. The contraction of the muscles is strong, and a large number of the muscles are involved, both sides of the body being affected. No regularity in the order of the contractions of the muscles has been noted. The leg, arm, face and back muscles are affected in irregular order. During an attack, any emotion or mechanical irritation causes a decided aggravation of the symptoms.

The following are the interesting points in the case:

- (1) The appearance of the myoclonus before the classical epilepsy.
- (2) The relation of the ingestion of alcohol to the development of the myoclonus.
- (3) The development of the classical epilepsy three months after the initial myoclonic attack.
- (4) The benefit that is rapidly produced by the adoption of the bromide treatment.

THE PRESENT STATUS OF PARANOIA.

By WILLIAM McDONALD, A. M., M. D.,

Assistant Physician, Butler Hospital, Providence, R. I.

It has been with an irregular gait, though perhaps in an onward direction, that we have searched for the well-spring of the psychosis called paranoia. The history of the study of the subject has been so often rehearsed that it is not needful to take up space with it here. Time will, however, perhaps not be lost in tracing lightly such part of the chase as the elusive form has led some of us younger psychiatrists.

We appeared upon the field in time to hear some of the wise talk concerning monomania, but too late to be greatly confused by that significant term. Fortunately, the impossibility of an involvement of any one circumscribed area of mental action has been quite generally conceded and the term "monomania" has been reserved for the most part as a characterization of the impulsive insanities rather than as another cognomen for paranoia. We did begin our studies, however, just in time to absorb some of the confidence which had newly pervaded the minds of psychiatrists as to their conception of the term "paranoia." It was with no uncertain words that we were taught how to make a diagnosis of paranoia. However indefinite might be our knowledge of other psychoses, here was one which we could understand. We were told that when we found a psychosis characterized by fixed, systematized delusions of a persecutory and grandiose nature, we might become suspicious that we had to deal with a case of paranoia. The chronicity and incurability of the disease were made plain to us and then its stages of development were described. There was the stage of subjective analysis, that of persecutory delusions, and finally that of pronounced delusions of grandeur which might be accompanied by a process of more or less rapid mental failure. In our student clinics, patients said to belong to this class were exhibited and we admired, as was expected, the brilliancy of their exploits in certain

directions. We were told that there was not necessarily diminution of the intellectual power of the individual, but that he merely looked at life from a standpoint not common to the remainder of humanity. He was said to be often a man of great capability in certain direction. Here was an individual said to be a scientific genius but one who could not be allowed to pursue in freedom his investigations because he held dangerous conceptions of the relations of other individuals to himself. We were told that many of the great men of history, the men who had accomplished great things, had been really paranoiacs; they were of large ability but with peculiar and deluded ideas; they believed themselves destined for great things, they were incited to deeds because they were dissatisfied with their position in life and thought themselves wronged and persecuted. In the hospital were found numerous patients who were pointed out as examples of paranoia; the fixity of their ideas was tested, the outlines of a system traced in their delusions, the tirades against imagined tormentors heard, the air of superiority and the constant evidence of a heightened self-consciousness observed, and we were satisfied of their right to the title "paranoiac." We have often heard a patient referred to as an old paranoiac in terminal or secondary dementia, while his neighbor, perhaps an older man and one in whom the disease had been longer evident, was spoken of as having undergone very little mental deterioration.

Recently our confidence in the conception of paranoia has received a jar; the Germans have been at work altering classifications; the dust of battle clouds the horizon; we are for a time in a sad state of confusion. Gradually the atmosphere clears and there is seen to have arisen a new form, or rather an old form presenting a new bearing and labelled with a new name, "dementia præcox." Under the term "paranoia" we find that we have been including not only patients, perhaps deserving the same name under the newer classification, but also a large number which now rightfully belong to the dementia præcox group.

It is the *Kraepelin* nomenclature which strikes forcibly on us of America. We not only accept the German's ideas; we bolt them whole. We become absorbed in the task of re-sorting

our patients and placing them each in his own pigeon-hole, placarded with his proper label.

Dementia præcox perhaps received the largest share of our attention. We found it comparatively easy to recognize the catatonic and hebephrenic varieties, and the more weak-minded of the paranoid form were readily assigned to their correct place in the new terminology. When we came to study the least weak-minded of the patients whom we had but recently called paranoiacs we found it difficult to decide who could be properly named a paranoiac and who a paranoid dement. With closer and closer observation of these erstwhile paranoiacs they began one by one to take their place in our minds as subjects of dementia præcox till we awoke one day to find that we had placed all of our paranoiacs in the dementia præcox class. Hurriedly, lest we should be found without a paranoiac in our company, we searched for one near and far. Using the *Kraepelin* definition as our model, we measured the patients directly under our care, but none were found to match it. Scrutinizing our past records none came to light, and finally after examining the recorded cases of literature, we wonderingly asked ourselves the question, "Is there no more paranoia?" Such an inquiry directed against a name which for nineteen years has stood as one of the most significant and stable in psychiatry, brings before the interlocutor a vision of frigid glances and heightened eyebrows. But let us consider the question with as little bias of preconceived opinion as possible.

The writer is free to confess it has been no easy matter to shed these preformed notions, and he is sure that he has more than once read into a patient's mental state a mass of those ideas, more especially in regard to paranoia. Given thoroughly instilled ideas as to what should constitute a paranoiac and finding a large part of the essential constituents present in a given case, it becomes a most facile process to complete the paranoiac picture by subjectively supplying a few deficient features.

In endeavoring to come to a decision it becomes necessary to study each case in question as if it had but newly come under observation. We must go back to the early records (and most of these patients have been in our hospitals for years), we must re-

hearse the statements of friends as to the patient's history previous to hospital commitment, and we must read carefully the notes of physicians and attendants as to behavior and condition in the hospital, before making direct examination of the patient.

Lest there should be any misunderstanding of our position, let us retrace the steps which we have taken in the endeavor to properly classify our patients. Let us begin by supposing ourselves placed before all the patients who are to be classified either as paranoiacs, paranoid forms of dementia præcox, or as subjects of closely allied psychoses. To what conditions should we apply the term "paranoid dement," and are there patients answering to the definition of paranoia as given by *Kraepelin*?

There is a group of these patients which has caused little confusion since the general adoption of the German classification, a form which in hospital experience is the most common of all the paranoid types and one in which the diagnosis is easily made since the patients all have stamped plainly upon them the stigmata of dementia præcox. These produce on the whole such a characteristic clinical picture, a picture which has been so generally recognized, that there is no need of a prolonged description. They are the cases which have rapidly developed under our eyes, or in which we can usually find the history of an acute onset. There have been observed in them at some time, and in a number are present at all times—the symptoms common to all forms of dementia præcox. They have shown, or do show, varying degrees of catatonia, negativism, stereotypy, mannerism, command, automatism, echopraxia, verbigeration in speech or in writing, or are found from time to time in a more or less stuporous condition. Hallucinations play a large part in the complex presented by such patients. Their delusions are usually more or less fantastic in nature. They rapidly pass into the stage in which they exhibit delusions of grandeur. Their degree of weak-mindedness varies from the gross, with almost no intellectual capacity, the patient merely manifesting his grandiose ideas by an occasional incoherent sentence, up to the forms in which there remains the capability of taking an intelligent and coherent part in a conversation. Such patients may present evidence of considerable ability in one or more directions. They may have musical talent of a high degree, possess great manual

dexterity in the arts, or even produce literary specimens of remarkable beauty of form and not altogether despicable as to intellectual content. The fixity and systematization of the delusions are not usually pronounced but vary within wide limits. Even the most intelligent will show, on close inspection of their system, incongruities, lack of logical form, and changes in both form and content from day to day or from week to week. In all of these, no matter what the degree of intelligence, the diagnosis is rendered easy and certain by the prominence of the stigmata of dementia præcox, and the clinical complex is so characteristic that we need not permit our problem to be further complicated with their peculiarities.

In a second group of cases, however, the diagnosis is not so readily made, although the patients are separated from those just described, not by a sharp class line, but merely by minute and scarcely perceptible degrees consisting in differences in the intensity of symptoms. Considering the group as a whole, we find that the patients have very much less mental impairment than those last described, and the feature in particular which renders the diagnosis less easy is that they have never, while under our observation, exhibited to any prominent degree the common symptoms of the catatonic complex. These are the patients with whom the greatest care must be taken lest an unwarranted diagnosis of paranoia be attached to their symptoms. We must see first if there be anything in the mode of onset which is contradictory to a diagnosis of paranoia.

The *Kraepelin* paranoia is a slowly developed illness, the ONSET often extending over years, during which the conduct and behaviour of the patient may show no great disturbance. There exists a secret, gradually increasing opposition between himself and his environment. If, therefore, we are to diagnose our patient as a paranoiac, we must be able to throw doubt upon any history of an acute onset. Howsoever gradual the evolution of a mental disease may have been, there seems to be always a proneness on the part of the friends to remain blind to it. One would expect that such unusual mistrust, depression and discontent would have attracted attention long before any gross breach of orderly conduct or grotesque behavior had produced a crisis calling for immediate surveillance of the patient. When,

therefore, in reading the records we find, as we did with a patient, that one of the first occurrences to attract attention was an unseemly walk upon the top of a piano, we are likely to think of a psychosis which is characterized by a more sudden onset than paranoia. It is rarely that anything like an exact previous history can be obtained from friends or relatives, as is well known, and our opinion as to the mode of onset must in the majority of cases be influenced by the character of the employment and the position in society which the patient has held for the years preceding the mental catastrophe which brings him to the hospital. If we have an opportunity to talk directly with the friends we must not be satisfied with an indefinite history of erratic conduct, irritability of temper, depression, etc., but must demand a description in minute detail of the behaviour and conduct from childhood. In this interrogation we may often find evidence of mannerism, stereotypy, negativism or an account of grotesque and nonsensical acts which will be highly suggestive of dementia præcox. *Schneider*¹ has beautifully demonstrated how the close inspection of a patient's early history may throw bright light upon the problem of diagnosis. The mental condition of the patient he describes had been diagnosed in Mannheim as *periodischer Verfolgungswahn*, in Weinheim as *chronische Verrücktheit mit Verfolgungs- und Grossenwahn*, and in Heidelberg as paranoia. *Schneider* traced the patient's course from earliest years to the present date, a period of about sixty-six years. He found that the history was one of advancement during the first thirty-three years of that period, that the patient had been industrious, saving, had made the most of his opportunities, had struggled manfully and successfully against adverse circumstances, and that nothing plainly pathological could be indicated in all that period. About the thirty-third year he exhibited for the first time symptoms of a grave mental disturbance, which remained practically unchanged in its type for the following thirty-three years. *Schneider* reasonably concludes that the evidence is of a sort to favor the assumption that a psychosis became active in the neighborhood of patient's thirty-third year. With the patients under discussion careful inquiry reveals a preponder-

¹ Allgemeine Zeitschrift für Psychiatrie, March, 1903.

ance of histories as, or even more, acute than that above quoted, but there are undoubtedly cases in which the onset is so gradual that there is nothing therein to contra-indicate a diagnosis of paranoia, and in these latter if such diagnosis is to be discarded it must be done because of other particulars in which the symptoms disagree with the definition of that psychosis.

With *Kraepelin* in paranoia the CLEARNESS OF CONSCIOUSNESS is not abnormally diminished, and a number of patients, whom we might on other ground designate paranoiacs, must be otherwise classed, inasmuch as we find evidence of pathological disturbance of consciousness. While, as has been stated above, these patients have never, under our personal observation, exhibited to any prominent degree the symptoms of the catatonic complex, we find in reading the ward notes and previous records that many of them have shown at times periods of confusion in which the incoherence of expression and conduct were not based upon delusional excitement. The descriptions of such attacks remind one of the epileptic confusional states, in that the excitement is of an aimless sort, of which the patient can neither at the time nor afterward give any explanation. "Transient periods of abstraction accompanied with fixity of gaze" is a frequent note in the early history of such cases, and it may be noted that the patient could be aroused from such condition only by a considerable effort on the part of a second person. It is often noted that these abstraction periods were not noticeably connected with any affective disturbance and, reading the records at this date, it must be confessed that the descriptions are highly suggestive of catatonic stuporous conditions. In a certain number there has occurred at one time or another a transposition of dates which in a few may have taken place consciously and because of delusional reasoning, but which in several instances suggests strongly gross disturbance of consciousness.

In paranoia of the *Kraepelin* conception HALLUCINATIONS form no essential part of the psychosis; they are as a rule absent or appear only in the auditory field, limited in most cases to the form of single words or short sentences. In *Schneider's* case, the Heidelberg diagnosis of paranoia could not be conceded as correct, not only because the evidence pointed to an acute onset,

but it could be shown that the patient had been at various times the subject of very intense hallucinations which played a large part in the up-building and preservation of his delusions. Our experience may have been exceptional, but with the patients who otherwise bore the greatest resemblance to the classical description of paranoia, the hallucinations were often intense, were of frequent occurrence, and formed, as a rule, a considerable portion of the ground-work of the delusional structure. The patients without hallucinations who bear the greatest resemblance to paranoia are those of the "high grade imbecile" class, a form which will be spoken of more in detail in another place.

The elaboration of a SYSTEM in the delusions was as much a part of the older conception of paranoia as it is of the *Kraepelin* delineation. It is to be feared that we may have been rather careless in the use of this term, so that it is perhaps not altogether superfluous to indicate what is meant by "system."

According to *Church and Peterson* "SYSTEMATIZATION consists of combining with the fixed idea complementary delusions in a more or less logical order, or the fantastic elaboration of the original delusion." A no more lucid definition, though one through which the subject is viewed at a slightly different angle, might describe a system as a multiplicity of delusions of which each individual false belief had had for one of its premises an antecedent error of belief, the whole delusional structure tracing its origin backwards over an ever-decreasing and more closely related number of fallacies. A system may thus consist of a small number of delusions, it may be confined to some particular group of concepts, or it may be so extended that it underlies every variety of association of ideas, alters entirely the relation of the individual to his environment and brings about complete transformation of personality. It is this last mentioned, broad and far-reaching elaboration of delusions which forms the system corresponding to the conception which obtains in the psychosis called paranoia.

Even when a system in the delusions has been determined there is need of much careful thought and consideration of the details of its structure if its exact nature is to be appreciated. To refer again to the helpful study of *Schneider*, the patient there reported, in speaking of his misfortunes or any of the ills

of life, charged all to the account of one whom he nick-named the "bulldog," who made mystical nocturnal visits to his room where she wrought all sorts of havoc among her victim's papers and possessions; he considered the influence of this persecuting individual to be all pervading and all powerful. *Schneider* shows that in the patient's attitude toward this mysterious person there was an absence of that intense and absorbing interest which one would be expected to exhibit toward such a powerful influence in the affairs of life, and that the "bulldog" merely offered a convenient explanation for every unfortunate occurrence for which the weak mind of the patient was unable to find the correct interpretation; thus in place of the "bulldog" playing the principal role in a far-reaching and intricate system, she was merely used as a personified and convenient cause to explain an effect, the real mode of production of which was beyond a weakened comprehension. When we find that a patient has delusions of persecution, that this or that body of organized individuals, government officials, relatives or other parties, are scheming for his downfall; when we find that he ascribes bad fortune and all of the ills of life to these instrumentalities; when we find that the patient not only attributes his ills to a delusional bad agency, but also claims to have an opposing good agency which he uses in support of a grandiose belief in his superior and exalted position in life; even with such extensive superficial evidence of a far-reaching system, let us be positive that the good and bad agencies do not afford an ever-ready explanation of what might be perplexing problems to a weakened mind. Such expressions on the part of the patient may be mere elaboration of, and have little more significance, than the terms "bad angel" and "good angel," "my guiding star" or "my fate," as used by many normal individuals.

Not only may we misinterpret a system or exaggerate it to a dignity of which it is undeserving, we may create one where none existed. It may seem childish to warn the trained man of science against rearing for himself in imagination that which never existed, but unscientific and crude as it may have been, the writer believes that he has been often guilty of reading a system into delusions where none, or one of a very minor degree, was present. It is easy and often entirely correct for

us to consider the patient as being on the defensive in the examination, but ought we not to be a little slow in suspecting him of concealing a whole system of delusions simply because he wears an air of mistrust or answers our interrogations in monosyllables? If we find that a patient believes that every picture-frame in the room is charged with electricity, that the trees outside are made of paper, that she has four thousand children, that one leg belongs to a far distant friend, and that her neck is turning to stone, we may say rightly that she has a multiplicity of delusions, but not necessarily a system. Such delusions may have, of course, no more intimate relation with each other than their common pathological basis. To exemplify the ease with which a system may be unwarrantably predicated we may briefly outline the course in a given case. Before coming to the Hospital, A. had attracted attention by going to the house of a friend and refusing to go to his own, asserting that he had been badly used by his father. For a period erratic conduct continued, finding expression largely in abusive remarks directed toward his father and culminating in a scene at his father's funeral. On admission he was morose and silent; direct questions were fruitless in procuring information as to the content of delusions. A few days later, in the course of a conversation, he made hateful reference to the Jews and spoke of a certain individual as "the king of the Jews." Was it not natural for us to keep these remarks in mind as possible indications of delusions in which the Jews figured as persecuting agents? On the following visits the patient meets us with sullenness or casts a glance of suspicion, and we perhaps come to the conclusion that recent questioning has aroused his suspicion and that he has included us in his system of delusions. Later we deliberately engage him in conversation concerning the Jews; he asks us if his nose is of the Hebrew type and says that his father's nose was perhaps a trifle more prominent and hooked than his own. We are not altogether without warrant now in associating such expressions with an early antipathy toward a parent and previously stated opinions concerning the Jews. It takes but little subtlety of imagination on our part to insert that which we consider to be the missing links in the delusional chain. We think that patient's early enmity toward

his father may have been intimately related to an imagined connection between the parent and the Jewish race, and deem it not only possible but probable that patient conceived this relation to be a blood-tie. Is it not easy to go beyond this point and elaborate a system along lines which we know such delusions commonly follow? We may think it probable that patient does not consider himself the son by blood but merely the adopted son of his so-called father. If the patient speaks of frequent headaches and wonders if there may not be something harmful in the food we are quick to suspect him of delusional belief in a poison, and we conjecture as to whether the delusions find their origin in hallucinations of taste or if they are independent of these. As time passes by it may be that the patient comes gradually to be surrounded by a halo of imputed sagacity. His failure to give direct evidence of delusion is spoken of as cunning evasion. His every move is watched, his every word recorded and peradventure these may be woven into a system existing in the mind of the examiner more than in the thought of the patient. The possibility of thus imputing a system where none existed is not exaggerated, since the very details here used as an example are taken from the case of a man who, long considered as a paranoiac and supposed to have many delusions concerning the Jews, in a frank talk with writer denied ever having had such beliefs. His attitude was such that an examiner became convinced of his innocence of any attempt to conceal the truth. He gave ample evidence that he had ground in his personal experience for prejudice, since he had once paid a single fee of \$10,000 to a Jew who charged that amount for obtaining his freedom from an institution. The last statement could probably be substantiated, since it is notorious that his comfortable fortune had been dissipated in legal proceedings revolving about commitments and attempts to regain freedom.

There is no attempt to argue here that there is no broad and extensively elaborated system in the mind of some insane patients, but merely that it is not altogether impossible to attribute to the diseased mind a system of delusions which exists wholly or in part in the fertile imagination of the examiner. The preceding expressions are also intended to demonstrate that a careful and conscientious search for a system in false

beliefs may exclude a patient from the class of paranoiacs in our nomenclature.

To correspond with the *Kraepelin* definition of paranoia the system of delusions must be found to be ENDURING and UNSHAKABLE (*unerschütterlich*). These qualifications are practically those implied in the old term "FIXITY." The delusions must remain throughout life; they are unshaken by argument, and the individual is unteachable as to the incorrectness of his views. Although experience is directly contradictory to the false beliefs it has no influence in bringing about their dissolution. The delusions may become slightly altered in form or in the mode of expression, they may become a trifle broader in scope, but never can the character of the content change. Here again, if we would make a diagnosis of paranoia, great care must be exercised that preconceived notions do not take the place of a careful observation. Because we find that the subject complains of the same persecutors to-day, next week and next month, we may jump to the conclusion that there is a marked fixity to his delusions. Unless we are particularly on our guard, we are not unlikely to attach our attention to some word which the patient has used in connection with his delusions and become accustomed to using it as a sort of trademark, a label, so to speak, of the mental content. Whenever this word reappears we take it for granted that the content which was thus labeled at an earlier examination still corresponds to the name. Thus one of the type which we are now considering used the self-manufactured term "tencilling" to describe the secret process through which enemies sought to harm him; this word appears again and again during the man's history; we find it after seven years have passed as we did at the initial examination. How easy it would be to conclude that the man's delusions had become fixed and to disregard the possibility of an alteration of the whole essential character of the content. It may be that those whom he considered enemies are now friends; where he once considered himself to be a high and mighty individual, the most careful examination would now fail to reveal that he believed himself of any more importance than plain John Smith. The continued use of the term "tencilling" might remain as a convenient term for, and a brief method of explain-

ing certain peculiar, unpleasant feelings. Among these patients we find a certain number whose delusions have retained all the characteristics embraced in the term "fixed," but careful study eliminates from the paranoia class others who might approach nearer to the requirements of such a diagnosis.

Still another diagnostic qualification of paranoia, according to *Kraepelin*, is COMPLETE RETENTION OF THE ORDER OF THE THOUGHT PROCESSES, expressed otherwise by some authors as RETENTION OF THE LOGICAL FORM. *Deffendorf's* adaptation of *Kraepelin's* work adds still another shade of strength to the definition by translating the *Kraepelin* phrase as "without clouding of consciousness, or involvement of the COHERENCE OF THOUGHT." Measured by any of these interpretations of the qualification, a large number of the patients who otherwise correspond closer to paranoia, must be differentiated from it. If the definition merely applied to certain periods or stages of the psychosis, a number of patients might answer to the description, for all of those whom we are now considering have long periods in which the order of the thought processes is apparently completely retained, but there is scarcely one in whom, either earlier in the course of the disease or in recurring attacks, there has not occurred for a longer or shorter time loss of the logical form of the thought processes. It is not always the case that such periods of confusion in thought and action are connected with intense affective disturbances. One patient, who has for years been considered a paranoiac, and whose spoken thoughts show ordinarily a fair degree of logical sequence, writes habitually such passages as the following: "The hospital and its employees still imprison my liberty and I wonder at it, a doctor timed due from a principle latent in ladies clubs based on untrue accusations laid to my tongue, more likely I guess from ferment arising from quarrels of ecclesiasticism responsible for the stupendous beliefs insufficiently illustrated in active goodness by gigantic trusts in behalf of humanity and adversity as a matter of divine right." Another was held for some time to be a most perfect type of the *Kraepelin* paranoia. Her husband stated that in the earlier stages of the disease she spent much time in writing, and on request, specimen letters were brought for inspection. A certain number were illegible scrawls, the substance of

which could only by an effort of imagination be interpreted as forming a coherent part of a delusional system. An example is here given:

"Nothing pleases me more than to receive a direct communication from Mr. Nye the Camp Meeting Advertiser.

"Grover and Camp Meetings are going to have. I most heartily endorse the movement, but the Pleir State that those I attend through the month of August will be a limited number.

"Never you fear 'Mr. Duffy will get there,' and along with him he will carry his little 'Son' just beginning to walk, for having had a blind closed he has been unable to see the light and if the courts don't see the Duff I'll see the courts."

"NIGGERTUN."

Such and other productions hardly bespeak coherence of thought in a woman who had for years been considered of average intellectual capacity and keenness, and yet in this case the symptoms were more strongly indicative of paranoia than were those of any other patient whom we have had under observation. There is always a tendency toward the preservation of those specimens of patient's work which are remarkable for some beauty of form or intelligence of construction and an aptitude to pass by without close analysis the more mediocre and inferior productions. These latter are not so often brought for the physician's inspection as the former, and it is to be feared that such from the hand of many so-called paranoiacs have never received their proper significance as indications of incoherence of thought.

Another important characterization of the *Kraepelin* paranoia is that the delusions must be formed without marked MENTAL DETERIORATION. The psychical weakness develops gradually and only becomes especially noticeable after decades. Naturally then, in endeavoring to group cases, the degree of mental impairment becomes an important factor for determination. As there is no standard of mental measure, it is by no means always easy to estimate the volume, velocity and vigour, so to speak, of the current of a man's mentality. As *Mercier*² says when we attempt this "our measuring tape becomes an India rubber band." We

² *Mercier*, Psychology, Normal and Morbid.

in America are constrained, in the greater poverty of our language, to speak of DEGREES OF DEMENTIA, while in Germany *Verblödung* and *Schwachsinnigkeit* are terms that may be used alone or so qualified as to express the varying shades of deterioration to be differentiated. But whether the term used be dementia, weak-mindedness, mental defect, impairment or deterioration, the writer has never been able to shake off a feeling of absurdity in speaking of a patient as having little or no mental weakness when he is at the time misinterpreting every one of the smallest incidents of life, when he argues wonders of significance from the chance flight of a bird, when he utterly misconceives the careless and accidental glance of a stranger on the street. It is perhaps correct enough in such cases to say that the process of mental deterioration is not progressing rapidly, or that it has been stationary for years, but surely it must be admitted that a high degree of mental impairment has at some time originated and persisted, inasmuch as the individual forms fallacious judgments in every hour and minute of life and clings obstinately to same in the face of diametrically opposite experience, testimony and authority. It is immaterial whether the delusion is formed because of defect of memory, because of abnormally intensified affection, or because of gross congenital or acquired mental disease; it remains nevertheless a sign of impaired mental action even in the face of preservation of the logical order of the thought processes. It may be argued that the entire personality has been altered and that what is taken for mental impairment is simply the result of a standpoint so altered that all the relations of the individual to the outer world have been transformed; that in his own little world his mind is acting correctly and without defect. If this is so we may still be allowed to ask what it is that has changed the individual's standpoint and relations with the outer world if it was not his own, either inherited or acquired, impaired and weakened mind? During that time in his life history, before he had formed definite delusions, when he was merely morose and depressed, jealous and suspicious, either because of continued states of hyperintensified emotion or because of some other congenital or acquired weakness, he began to find not only conceivable but even credible those things which by the mind of

normal strength are taken as inconceivable, or, at most, conceivable but not credible. There has taken place what *Mercier*¹ terms a transference from one category of belief to another without appeal to authority, experience or testimony, and the mind has performed merely, in a less significant degree, the same process which manufactures delusions out of similar concepts. Call this abnormal mental action a lack of the power of judgment or a lack of the ability to suspend judgment, or by any other name, the fact remains that premature and incorrect conclusions are day by day altering the personality and carrying the sufferer forward to a shifting of his standpoint (*zu einer Verrückung des Standespunktes*). Be it a weakness of judgment only, it is nevertheless a mental weakness, an impairment, an intellectual defect. After the standpoint has been shifted it may be pointed out that the order of the thought processes remains the same, that memory shows no defect, and that the patient is still capable of very intelligent and even brilliant exploits in the arts or sciences. In other words, the mental deterioration or defect is not progressing in extent, and that it has never gone beyond the point of shifting the standpoint and destroying the patient's chance of acting the part of the normal man. That the mental defect differs in paranoia from that of dementia præcox, in that the former is a defect in the course of development, while in the latter it is a retrograde process, can scarcely be argued, since in paranoia also the patient has for years been able to make correct judgments and so to order his life that no abnormality of conduct and behaviour could be pointed out; and that here too there is a decidedly retrograde process from the beginning is evident in that the individual departs more and more from his ability to make correct judgments. Whether this accident is in any important particular different from the injury which has occurred to those lighter forms of dementia præcox in which the disease process has come to a standstill, the writer does not pretend to say, but it is of importance to us to know that the paranoiac has at some time suffered either gradually or suddenly from mental deterioration and that the mental weakness thus produced can scarcely be differentiated from that which char-

¹ *Mercier, Psychology, Normal and Morbid.*

acterizes certain forms which bear lightly the finger-marks of dementia præcox. In these latter cases it may be that the disease process has extended a trifle further and has produced the conditions which give rise to hallucinations and occasional periods of incoherence of thought, and it really seems that the lighter the attack of dementia præcox, in these paranoid cases, the more does the individual resemble the paranoia of *Kraepelin*.

Determination of the weak-mindedness of some of these higher forms of dementia præcox is often difficult and rests chiefly on finding by close observation and study slight incongruities and contradictions in the thought-processes, a tendency toward emotional indifference, abstraction or apathy, especially in the often remarkable indifference to, and absence of, chafing under hospital restraint. Though they are usually bright and may at times show even brilliancy, there is nevertheless a degree of psychical torpor as is seen in their absence of ambition and lack of eagerness to seek new pursuits and more congenial occupation. A few, even of the higher types, will occasionally exhibit brief periods of automatic agitation or traces of stereotypy, as in the case of one who at intervals utters loud and stereotyped declamations composed of his grievances and desires.

It is certainly suggestive that the cases with which we have dealt approach the paranoia of *Kraepelin* by gradations of less and less mental defect but that there is not one which conforms to his definition in all essentials. Either in the mode of onset, in the course and symptoms, or in the outcome were found a number of particulars so materially different from paranoia that such a diagnosis could not consistently be made.

There is a form of insanity decidedly of the paranoid type which, however, cannot be classed with the paranoia of the late classifications nor yet can it be included with dementia præcox. We refer to the delusional psychosis of the high grade imbecile. It is probably not possible in all cases to differentiate such cases from the paranoid forms of dementia præcox, but that there are cases of the variety indicated we are in a position to affirm since we have under observation a mother and a daughter whose symptoms did not have an acute onset, are identical in character in the two cases, and with whom the whole clinical com-

plex differs quite materially from that of dementia præcox, on the one hand, and from paranoia on the other. *Sander* proposed the term "ORIGINAL PARANOIA" to embrace cases probably the same in character with these here mentioned. The same term is used by *Brower and Bannister* in their lately published text-book in which it is stated that these patients "differ from paranoiacs * * * in the genesis of their insanity and delusions: in the former (paranoiacs) the mental disorder originates from an apparently normal condition; * * * the condition is a pathologic one though imposed upon a predisposed and more or less defective organization. In original paranoia, on the other hand, the mental disorder is in the natural order of the patient's development, the inevitable result of a defective organization." There is not space to describe in detail the characteristics of this class; we may merely indicate a type which will be readily recognized in that the onset is never sudden, the patient having shown peculiarities and deficiencies from childhood, there are no hallucinations (or if present they are of secondary importance in the complex), there are none of the catatonic stigmata of dementia præcox, and the subject occupies himself from morning to night in elaborating romantic fantasies of a delusional nature just as an author would elaborate the plan of a book. They are day-dreamers, and just as the air-castle builder changes his fancies, just so does the fixity of the delusions of these patients depend upon the passing mood. There is somewhat of a system in these delusions, although as indicated, it is of a dreamy and superficial variety.

Another paranoid type is the so-called ALCOHOLIC PARANOIAC. These cases can be recognized by their alcoholic history, as well as from the character of the delusions which are described in every text-book on insanity.

In *summing up* our study of the psychoses which have been heretofore called paranoia, together with those which have been designated as paranoid forms of other psychoses, we may thus briefly word our deductions:

1. There are patients with paranoid characteristics who, because of gross weak-mindedness and well-marked catatonic symptoms, are easily recognized as subjects of *dementia præcox*.
2. There are others not nearly so weak-minded as those of

the first class who have never exhibited prominently the signs of the catatonic complex, who have shown the so-called paranoid symptoms to such an extent that in our earlier experience we were wont to call them paranoiacs, and who may be classed in *dementia præcox* in that one or more of the following qualifications find direct application to their symptoms.

(a) *The onset* was more or less acute and was not of the type which has been characterized as "shifting of the standpoint."

(b) *Consciousness* has, at one time or another, suffered *clouding* or *disturbance* not due to delusional or other excitement but of decided pathological nature and as an essential expression of the psychosis.

(c) *Hallucinations* are, or have been, of exceeding prominence.

(d) Careful observation and analysis show that the *delusions* are not really *systematized* or that the *system is incomplete* and constricted to a field less than that covered by patient's whole mentality and conduct. Moreover, certain of the dominating delusional concepts are used as ready explanations of phenomena which a weakened intelligence is unable to interpret in a more logical manner.

(e) The delusions are not *fixed*.

(f) *Gross incoherence of thought* of a pathological nature has been evident either in spoken or written expression.

(g) Analysis of the significance of conduct and behaviour discovers a degree of *mental impairment* not consistent with a diagnosis of paranoia.

3. There is a class of patients in which the paranoid delusions occur in the natural course of development and because of defective organization. The peculiarities and deficiencies are apparent from youth. These are often spoken of as *paranoid high-grade imbeciles*, or as *original paranoiacs*.

4. There is a *paranoid form of alcoholic insanity*.

5. Though paranoid symptoms occur often in *senile dementia*, in *paresis*, in *manic-depressive insanity* and in *melancholia*, the characteristic stigmata of the particular psychosis in which they occur will lead to correct diagnosis.

6. The study of our own patients, of old records and of the classical cases of literature has thus far failed to present to us a case which could not be classed with greater appropriateness

with some one of the above mentioned psychoses than nominated paranoia.

In conclusion it may be said that the writer is aware of the sad irony of a situation in which, only nineteen years after the introduction of paranoia into psychiatry, he makes room for a "paranoid dement," for a "paranoid alcoholic," for a "paranoid high-grade imbecile" and for paranoid forms of other psychoses, but none for a simple, plain, unqualified "paranoiac."

KORSAKOFF'S PSYCHOSIS—REPORT OF CASES.¹

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Since Korsakoff's first description, presented in 1887, of the mental disturbances associated with multiple neuritis, much valuable literature on the subject has been contributed. However, in the English language few contributions have been recorded, and in order to bring more prominently to your attention a mental disease which is now generally recognized as a clinical entity, I take the proffered opportunity of presenting this paper.

In American literature we find, outside a few brief text-book notices, few references to this mental disorder. Mills in 1886, in the discussion of a paper by Dr. Seguin, drew attention to the mental symptoms associated with multiple neuritis. Atwood, in 1888, reported three cases of multiple neuritis associated with insanity. In his first case the neuritis developed in a melancholic patient as a result of arsenic taken with suicidal intent, and the mental symptoms did not appear to have been in any way associated with the neuritis. In the other two cases the mental disturbance followed in the wake of a multiple neuritis, and coincided with the Korsakoff symptom-complex.

Fischer concluded from a study of six cases, that in multiple neuritis, especially when due to alcohol, there existed a disease which affected the brain and cord as well as the peripheral nerves, and that the mental symptoms were not infrequently the most distinctive; the special characteristics being loss of memory for time and place with impaired association of ideas, accompanied at times with hallucinations and delusions.

Korsakoff characterized the disease as "polyneuritic psychosis" because he considered polyneuritis an essential manifestation, but inasmuch as the neuritic symptoms might be poorly

¹Read before the New England Psychological Society, September 29, 1903.

defined he preferred the name "Cerebropathia psychica toxæmica." This has been favored by some, others prefer to call the disease "Korsakoff's Psychosis."

In choosing a name we here meet with difficulties presented in other diseases by attempting to define under the name a whole disease process. The precedent established of designating the disease by the name of its alleged discoverer, I think, is here fully justified.

Korsakoff's conception of the disease as a clinical unit naturally brought forth criticism. Jolly considered it as a syndrome which could accompany other diseases. Ferrari did not regard it as an individual and characteristic disease. Episoto, because he found similar symptoms without polyneuritis, and disturbances of memory as a common symptom in all pathological processes due to toxæmia of the nervous system, did not define it as a clinical entity. However, by far the greater majority of investigators accept Korsakoff's view.

Kraepelin places this disorder under the infectious insanities. Bonhoeffer objects to this grouping because many of his cases did not present a preceding acute infection, although he has observed, as Mönkemöller had previously noted, in numerous cases an acute infection directly preceding the onset. He draws attention to the similarity between the symptoms of this disease and of delirium tremens as a proof of the alcoholic nature of this disease.

The intimate relationship existing between Korsakoff's psychosis and the disease which Wernicke designated as *Polioencephalitis acuta superior hæmorrhagica*, has called forth several observations. Elzholz concluded that Wernicke's polioencephalitis was only a different manifestation of the same process which underlies Korsakoff's disease, and that it only differed in being confined to the region of the eye-muscle nuclei. Raimann reported a case in which delirium tremens and polioencephalitis appeared first followed by Korsakoff's psychosis. Bonhoeffer, as a result of the study of his own cases combined with those of Wernicke and Kruckenberg, was impressed with the association between the two diseases; the psychic symptom-complex, the neuritic symptoms, and the anatomical pathological findings, indicating to him the unity of the process.

Etiology.—That the disease develops on the basis of a toxæmia is conceded. The nature of the poison which affects in some cases only the central nervous system, in others both the central and peripheral, is not clearly understood. It is presumed that it develops through the accumulation of toxins brought from without or produced through secondary metabolic changes, also through the metabolic changes following auto-intoxication, and that the toxic products exercise a specific action on the nervous system. Whatever may be the final pathogenic agent, we know this disease follows various intoxications, and chronic alcoholism stands so prominently in the foreground that by some it is considered a *sine qua non*. There appears to be no doubt but that the brain which has become injured through alcoholic intoxication reacts more readily to a superimposed toxin either produced within the organism or introduced from without. Yet the possibility of the condition appearing on ground not prepared by alcohol cannot be denied. Korsakoff's fourteen classical cases in which alcohol did not enter as a predisposing factor emphasize this.

In the alcoholic cases an acute infection very frequently precedes the outbreak. In Mönkemöller's 24 cases only two did not present this acute infection.

It is estimated that at least three-fourth of all cases are of alcoholic origin. Jolly found only two among 19 which were not alcoholic.

Among the other causative factors many conditions have been met with, most conspicuous among which appear typhoid fever, tuberculosis, gastro-enteritis, malignant growths, jaundice, arsenic, lead, etc., in fact the same causes which produce multiple neuritis.

It is more frequent in men than in women and among women chronic alcoholism is proportionately more frequently the cause. In men it usually occurs between the ages of 30 and 55, preferably near the 45th year. In women, as a rule, earlier.

Symptomatology.—The most important symptoms in the psychic field are:

(1). A memory-weakness which involves chiefly recent occurrences.

(2). A defect of the ability to retain certain impressions in the consciousness and after a definite time to reproduce them (Merkfähigkeit).

(3). Pseudoreminiscences or falsifications of memory.

(4). Loss of orientation.

Furthermore we have less significant symptoms which I will mention later.

The onset is not uniform in the different cases. Certain premonitory symptoms may present themselves consisting of a change in the disposition; the patient becomes irritable and whimsical; general weakness ensues; attacks of dizziness may come on, combined with a certain forgetfulness. When the disease develops along with the neuritis the physical disturbances may be so profound as to cloud the mental picture, which, on that account, does not for some time become prominent.

We have a beginning with an acute infection, or in the alcoholic cases with a delirium tremens which gradually passes off in favor of the more characteristic symptoms.

An onset with stupor, in which the patient lies in a comatose condition for weeks and then gradually clears up presenting the significant symptoms, is rare.

Finally we have a form which develops slowly with an increasing memory weakness.

Most frequently the disease arises acutely with delirious symptoms; the patient loses his orientation, becomes extremely irritable and fault-finding, is confused as to his surroundings, presents many vague fears which are especially prominent at night when the restlessness is also more marked. During the night he is unable to sleep and afraid to remain alone; talks continually to himself; terrifying hallucinations of sight may further increase this fear. The consciousness may remain clear, or there may be a disturbance of consciousness with incoherent talk. The significant memory-weakness soon becomes apparent, and in all cases which successfully survive the acute phase, we find fairly constant symptoms as characterized above.

The peculiar memory disorder is regarded as the most important symptom. The patient becomes unable to hold in his memory recent occurrences. He cannot tell whether he has

previously seen the physician, and he even does not remember those with whom he is continually in contact; he forgets what he has been doing a half-hour before; the time of the day he cannot give; he repeatedly asks the same questions; and what has gone on around him quickly passes out of his memory. This defect is well shown in my cases.

In striking contrast to this is the retention of the earlier memories. The memory up to the time of the sickness is usually well retained, however it may go back and involve events prior to this time. Sometimes events of earlier times are recalled but the time of their occurrences are confused. One of my patients could recall the various occupations he had followed, but he confused the sequence, and said his last occupation was in a cotton-mill, whereas he had not worked there for eleven years, and had since taken up two different vocations.

Occasionally a few events are recalled whilst every other occurrence during the same period is forgotten, and thus we have traces of memory during an amnesic period. The defect may extend back a number of years, and may be so severe that all the old experiences are forgotten. This may be so intense that the memory for words is lost and the patient is only able to utter disconnected sounds. Hence we can speak of an amnesic aphasia.

Owing to inability to remember any of the recent events the patient may imagine himself to be living under the same circumstances which existed years before. Bonhoeffer quotes a case of Liepmann's which illustrates well this retroactive amnesia. The patient was a fifty-year old journalist who had had an amnesia for thirty years. He called himself a student, spoke as if he were living thirty years back; he discussed political problems as they appeared at that time, yet he acted as an intelligent man on general questions, whereas if his memory had been absent for thirty years he could only have acted as a man of twenty. An examination showed that the interval between the retained and the lost memory was not sharp, and that there were traces of memory during the amnesic period. In the majority of cases the defective memory only extends back to the origin of the disease.

In connection with the memory disorder a defect of that which I have spoken of as '*Merkfähigkeit*' is described. This is tested by presenting pictures, words, numbers, objects, etc., to the patient and noting his ability to reproduce them. This ability can be so impaired that the patient cannot recall two words given in succession, or even one word of many syllables.

Another significant symptom connected with the amnesia, and which probably arises from the same conditions, is the pseudoreminiscences or falsifications of memory. Patients relate various experiences through which they think they have just passed; thus they tell of a journey from which they have just returned; described accurately the various places they have visited and the conversations which have taken place. They tell of visits they have received from friends who have been long dead, etc. These are all described as very recent experiences in which they have actively participated, although they may have been bedridden for weeks. In my post-typhoid case these were particularly well-defined. These falsifications of memory are sometimes produced simply to fill in the memory gaps, or they may consist of fantastic adventures spontaneously related.

Korsakoff separates the memory illusions into two groups. In the first group the patient relates experiences which he had perceived before in the same situation; in the second group he relates adventures which come into his mind and through which he has not passed, and which are accompanied by a peculiar subjective feeling of participation. To Korsakoff we are indebted for an analysis of these phenomena. He concludes that they are common in polyneuritic psychosis; that they may be changeable or fixed in their character; and that the theme is most frequently of funerals, deaths, etc.

He considers that they nearly always originate from actual memories, in consequence of the conjunction of memory traces in the unconscious sphere with apparently constant association groups. These constant associations originate in the unconscious sphere and later appear in the consciousness, a defect in the process of the idea-association being necessary, whereby combinations become possible with a falling-out of a link of the association chain.

The disorientation, considering the amnesia, can be readily understood. It varies in its intensity. The patient may know his surroundings in the sense of his earlier associations. The orientation for place and persons may be acquired; usually the time conceptions are most disturbed as the patient is unable to keep the run of time, and to the question as to when a certain event, which the patient remembers well, occurred, we receive an incorrect response.

Hallucinations may enter in as a symptom of this disease; the hallucinations of sight most frequently.

An irritable disposition may continue throughout the course, or it may give place to one of apathy and indifference, or to a mild euphoria. Emotional depression is sometimes observed.

Bonhoeffer considers the momentary attention good, but the general attention poor.

In another place I have mentioned the possibility of the absence of any neuritic symptoms accompanying this disorder. The number of cases in the literature in which the genuine psychic symptoms existed without any apparent signs of neuritis are of sufficient importance to force us to accept this possibility. In only one of my cases was there any doubt about the existence of neuritis, and in that one I could not positively exclude it as it may have been present sometime during a period of two months when the patient was outside of the observation of friends and physicians. The symptoms may be so poorly defined that they are overlooked or they may have passed off before the onset of the psychosis. They may vary from slight sensory disturbances to profound conditions with paralyses and contractures, or may even involve the cranial nerves. The cases presenting nothing but slight sensory disturbances are said to be frequent.

Usually the neuritis develops along with the mental symptoms, and is ushered in with vomiting and general weakness; then follows more localized weakness of the extremities, preferably the lower extremities, the knee-jerks gradually become lost, the other reflexes diminished, sensory and trophic disturbances develop. Atrophy of the muscles is soon noticed, and finally we have in severe cases a well developed symmetrical

paralysis of all extremities. The involvement of the vagus nerve is frequently noted.

The lower extremities are more frequently involved than the upper and, as Oppenheim pointed out, the distal muscle regions are first affected. Paralysis of the extensors is more frequent than the flexors. An organic disturbance usually accompanies the neuritis and the nutrition of the patient suffers.

Course and Outcome.—The course and outcome depend largely upon the etiological factors. In those forms in which the psychosis develops on the basis of a non-recoverable disease, such as tuberculosis, etc; the prognosis is, of course, bad. The initial delirium of the disease can of itself be of sufficient severity to cause death. In the severe deliria and in the stuporous forms death sometimes ensues as a result of the profound intoxication, or it may be due to an involvement of the pneumogastric.

The most common form, in which the initial delirium passes into the stable condition of amnesia, disorientation and pseudoreminiscences may exist a variable length of time. Usually the neuritic symptoms disappear in a few months, but the improvement in the mental symptoms does not go parallel and these may continue for months or years after the disappearance of the neuritis.

Korsakoff in his original paper mentions the possibility of complete recovery. In this opinion he is upheld by Tiling and Wernicke. Mönkemöller and Bonhoeffer have never seen a complete recovery and only admit a recovery with defect which shows itself in memory-weakness, neglectfulness of work, diminution of the initiative and slight irritability. Soukanhoff and Boutenko, in a review of the literature, found examples of complete recovery rare, and these were mostly of alcoholic nature. Among the cases occurring in women, where fourteen recoveries were reported, it was found that eleven originated on an alcoholic basis.

Kraepelin speaks of an outcome in dementia arising from an increase of the memory falsifications.

Jolly thinks that the clinical picture which he calls 'Korsakoff syndrome' and which he considers accompanies other diseases

can pass into general paralysis and paranoia. If we are dealing with a disease *sui generis*, such a transition is, of course, anomalous.

Diagnosis.—In making a differential diagnosis one has to take into consideration several conditions, chief among which comes general paralysis. This is sometimes difficult owing to the occasional similarity of the premonitory symptoms. The slower development, the stability of the psychic symptoms, the speech defect, the immobile pupils and the absence of marked neuritic symptoms, point to general paralysis. Kraepelin mentions the greater disturbance of judgment in the paretic in contrast to the more pronounced impairment of memory in the Korsakoff's disease. The intactness of the intelligence speaks for Korsakoff's. The peculiar disorientation and the amnesic symptom-complex are rare in general paralysis, though they may be present.

The confusional states at the onset of senile dementia often present exactly the same amnesia, as Tiling and others have pointed out. For this disease we have the greater emotional instability, the childishness, the physical signs of senility and the absence of neuritic signs. While it is an established fact that the psychosis can exist without the polyneuritis, the presence of a multiple degenerative neuritis is of value for the diagnosis.

Bonhoeffer dwells on the intimate association between the chronic alcoholic delirium (Korsakoff's) and delirium tremens, and states that the severe acute alcoholic delirium is identical with the introductory delirious phases of Korsakoff's disease, and that even in the later stages of the delirium, symptoms of the typical delirium tremens are recognizable; furthermore, anatomically, there are in both diseases similar pictures.

The differentiation from the deliria of the acute infections is in some cases impossible at first, inasmuch as the acute infection often directly precedes the onset of the disease. The continuation of the delirious symptoms after an apparent critical sleep and the passing away of the delirium in favor of the amnesia, has been noted by Bonhoeffer as significant for the development of the chronic delirium. The stuporous forms are liable to be

confused with meningitis and other diseases accompanied by increased intracranial pressure.

Pathological Anatomy.—In a disease which clinically involves not only the central nervous system but the peripheral nerves as well and even the whole organism, we must expect to find an anatomico-pathological foundation.

The findings in the peripheral nerves and the anterior horn-cells in an uncomplicated multiple degenerative neuritis are well known; the only difference of opinion arises over the question as to the part played by the blood-vessels. It is but fair to anticipate analogous changes in the cortical neurones if the psychic disturbance is combined with the neuritis as a manifestation of a toxæmic process.

A variety of findings in the cerebrum, spinal cord and peripheral nerves have been recorded, but further study is required before we are able to outline an anatomical process pathognomonic of the disease.

Cole, who made a careful anatomical study of three fatal cases of alcoholic neuritis, with accompanying mental symptoms, reports degenerations among the fronto-thalamic fibres, changes in the cells of the cortex and of the cranial nerve-nuclei of the type of the axonal reaction; similar changes in the anterior horn-cells, fibre degeneration in the posterior columns and in the pyramidal and cerebellar tracts, degenerations in the nerves; in one case severe vascular changes in the cord, medulla and pons with thrombosis and hæmorrhage. His observations suggest to him the toxic origin of the lesions, and he considers the changes in the cells and fibres as an expression of a highly selective affinity of whole neurones, the peripheral neuritis being merely a local expression of the affection.

Soukanhoff found diffuse degeneration in the spinal cord, the axonal reaction change in the anterior cornual cells, parenchymatous neuritis in the peripheral nerves with fatty degeneration of the leg musculature.

Gudden found arterial degeneration with patches of softening having a predilection for the central gray matter and the nuclear region of the third ventricle. He also described fibre degenerations most notably in the tangential fibres.

Miliary hæmorrhages have been observed throughout various parts of the cerebrum as well as more diffuse hæmorrhages similar to those which occur in *Polioencephalitis acuta superior hæmorrhagica*.

Treatment.—The treatment of the accompanying neuritis is the same as for any multiple neuritis. Rest in bed during the acute stage is, of course, essential; the treatment otherwise must be chiefly symptomatic and expectant. Due care must be exercised to counteract the tendency to trophic disturbances. Little in the line of medicinal treatment can be expected when the disease has passed the acute stage. The question as to how long the patient should remain in the hospital should he only partially recover, involves problems which will not be discussed here.

Case I.—L. W. H., female; 51 years old; oldest of three sisters, one of whom has been a patient in the Taunton Insane Hospital for years, and is considered a high-grade imbecile; the other was not considered of normal intelligence.

Patient herself was always peculiar and eccentric, dull and backward at school, and was regarded generally as weak-minded. Since leaving her home on the death of her father ten years ago she has been satisfied to work for her guardian at very small wages. She has never had previous serious illness; was never married; no sexual disorders; no alcohol or drug habit.

During August and September, 1901, she went through an attack of typhoid fever. Her physician informed us that the disease ran a normal course. During the sickness she was delirious for short intervals when the fever was high, but otherwise she presented no mental symptoms. The fever subsided by lysis after a course of three weeks. Ordinary symptomatic treatment was given. During the convalescence and after a few days of normal temperature she appeared to collapse; could retain little nourishment; began to lose control of her feet and shortly afterwards her hands. This paresis was first noticed in her inability to stand alone. She was unable to sleep, and complained of abnormal sensations in her legs and arms; she screamed when she was moved or touched. Her physician reports that throughout this her temperature was normal.

Coincident with this she presented symptoms of mental derangement. She began to speak to people whom she thought were in the room; said she saw funny little men on the wall; spoke of men coming with instruments to cut her up; a picture of McKinley she referred to as a man with a revolver who was preparing to shoot her. She talked to herself a great deal.

She became irritable and capricious, found fault with the way she was being treated, scolded her physician, frequently broke out screaming that the house was on fire and that she was going to be killed; men were firing revolvers at her; she could see people coming to take her away. She was afraid to remain alone, and if left alone called for somebody to come to her.

Her condition was much worse at night; she then became fearful and screamed frequently; her visual hallucinations were more active, and she manifested greater agitation. For periods of three or four nights she would not sleep, and by her constant screaming and crying she kept the household awake.

Her memory for recent occurrences became faulty; she frequently asked to be turned in bed, saying she had lain for hours in the same position, whereas she had a few moments before been changed; the visit of her physician she forgot immediately after he had left, and each time he came she spoke of it as if it was the first time she had seen him. She affirmed that she had not seen her guardian for days, after he had remained away for a few moments. She called for food immediately after having taken her nourishment, said she was being starved and had had nothing to eat for days. She asked the same question over and over, forgetting that she had just received an answer.

Her time conceptions were much confused, she spoke at times as though she had just returned from a journey, and she described in detail places which she said she had seen and conversations she said had taken place; at other times she spoke as if she was in an altogether different place, and she related occurrences which she said were happening at such a place.

Her condition remained essentially unchanged up to the time of her admission January 21, 1902. She had been confined to bed for two months; had taken small doses of whiskey and a 'tonic'; no other drugs.

Physical Examination.—Helpless and bedridden: trophic ulcers in sacral region and back of knees; skin loose, dry and scaly: subjective symptoms of pains and numbness in the arms and legs. Atrophy of the muscles of the arms and legs; wrist-drop; foot-drop. Marked flexion at knee and elbow joints. Diminution of the faradic excitability of the leg and arm muscles. Temperature sense not appreciably impaired. Sense of location intact. Evidently hyperæsthesia, but the patient cries through the whole examination. No areas of anæsthesia discovered. Marked tenderness on pressure of the nerve-trunks of the legs. No involvement of the cranial nerves. Knee-jerks absent, likewise tendo Achilles and elbow-jerks. No plantar reaction. Pupils equal and regular, reacting promptly to light and accommodation. Organic reflexes normal. Speech undisturbed. Tongue protruded in the median line and was steady. Temperature on admission 100° F., which a few days later dropped almost to normal.

Shortly after she was taken on the ward she complained that she had been packed in glass, fish bones and mustard; and during the night she was frightened, spoke of different people coming to take her away, and she asked to have some one remain with her.

She was disoriented as to time, and the second day was unable to tell how long she had been in the hospital, nor could she throughout correctly orient herself in this respect. She at times recognized that she was in a hospital, again thought that she was at home, and again that she was in a boarding house. She called the physician by the name of her former physician or her guardian, yet there were times when she gave the correct names of the physicians and nurses.

Her romancing was quite pronounced: one morning she told the physician that she was very tired, "I was down town yesterday and during the night I had to sleep cramped up on a stairway and it was very uncomfortable." She told of her travels to Cuba, to distant cities, and vividly described these imaginary journeys. She pictured sugar plantations and described minutely the process of cutting the cane. (It was learned that she had never seen a sugar plantation, and it was

supposed that her knowledge came from reading or from hearing about it.) She spoke of having seen a little girl in one of her journeys, and the dress, the color of the hair, the facial expression, were so strongly impressed on her that she affirmed that she could at once again recognize the girl.

At another interview she claimed that she had just returned from a visit to a sick friend, and she related the conversation which she said had taken place. She produced many reminiscences of the past and related them as just having occurred. Thus she told the nurses of the work she had just completed in the kitchen, of conversations she had had with her friends, of the church social, etc.

The defective memory for recent events was not so marked as in the other cases; however she could never tell what she had done on the previous day, and although she could not remember the day of the week or the month, she usually told the time of the day within half an hour. The day after the physical examination she had forgotten about it, though she later erroneously stated that she had been examined at her home by one of the hospital physicians.

The most striking feature about her memory was the inability to give the correct sequence, and present events were confused with earlier occurrences.

Her remote memory was always accurate and she could easily recall all the events of her life up to the onset of her sickness.

Sensory hallucinations were noted especially at night. These were confined almost exclusively to the visual sense. In the evening she has spoken of seeing little children around her bed, and she has called to them to get into bed with her. She has called the attention of the nurses to faces which appeared on the wall, and she has asked them to remove objects which she thought were clinging to the ceiling.

Her disposition was irritable. The agitation and fear were especially noticeable during the night.

The condition presented little change until the end of March when symptoms of septic intoxication set in, and April 1st, four days after the symptoms were first noticed, she died suddenly.

An autopsy offered a pulmonary embolism as the immediate cause of death; a pelvic abscess as the probable focus, with secondary abscesses within the peritoneal and pleural sacs.

The anatomico-pathological findings in the peripheral nerves and central nervous system corroborated the clinical evidence of multiple neuritis. Certain nerves of the extremities showed parenchymatous degeneration; the anterior horn-cells in the cervical and lumbar enlargements presented the axonal reaction; degeneration of fibres was found with Marchi's stain in the posterior columns of the cord. The examination of the brain is not completed, however, none of the Betz cells or the large pyramidal cells which were examined gave evidence of the axonal reaction, the acute alteration being the only cell-change detected. There were no miliary or large hæmorrhages, or foci of softening.

Case II.—J. H., male, 51 years old; family history negative; an Englishman by birth; of limited school knowledge, but sufficiently ambitious to improve his opportunities for study. Since the age of nine he has worked in a cotton-mill and followed this occupation until 1890 when, as a result of an injury to his eyes and consequent defective eyesight, he was compelled to give up such work and for two years he solicited for life insurance. He later earned a livelihood peddling furniture and small wares.

He was married the second time in 1874. No venereal diseases, nor has he had any serious illnesses.

While always a moderate drinker, he did not drink to excess until the early nineties, since which time he has regularly taken a half pint of whiskey at night, besides variable quantities during the day. His relatives stated that he had been literally soaked in whiskey and beer for five years. His disposition changed, he became irritable, negligent and abusive if not given money for drink; his whole desire was to satisfy this craving. He has even asked his neighbors to give him money for drink when he could not obtain it at home. Many times a policeman was called to quiet him after a drinking bout. This was his condition two years before admission.

In August, 1900, he had an attack of delirium tremens. In

the middle of May, 1901, he began to complain of a feeling of weakness, and he staggered even when not under the influence of alcohol. He complained of pains and peculiar sensations in his legs. Coincident with this his memory became very defective, which was first noticed in his repeatedly asking the same questions, and in his asking for something to eat immediately after having eaten. He spoke of his father and several times asked his family where his father was; he said he had been talking to his father a day or two before. He had never seen his father in this country, in fact, he had received notification of his father's death some years before this.

He related to the family stories of journeys which he said he had just taken, while for two weeks he had not gone out of the house, yet almost every day he had a fictitious story to tell, of where he had been and of what he had been doing. Sometimes he related an occurrence and would say it was a dream, then, perhaps two minutes later he would relate the same thing and affirm that it had actually happened. While the majority of these were genuine reminiscences, he did fabricate and tell of things which he had never done. Part of the time he spoke as if he were in England, yet he always knew his wife and children, and he could find his way about the city without difficulty.

He slept poorly and was much more disturbed at night; spoke of people talking through the window to him and often he jumped up suddenly in the night saying that he was frightened; then later related these fancies as actual occurrences.

On account of his poor memory he was continually repeating over and over the same statements, yet he never would admit that he was forgetful, and he always filled in the memory gaps with fabrications. He was extremely irritable and allowed no arguments on the part of his family.

He was seen by a physician in the middle of July and was found to be physically run down, complaining of severe pains in the head, pains and abnormal sensations in the legs, but without paralysis or trophic changes. The sensory symptoms were confined entirely to the legs. No further neuritic symptoms could be elicited. The sensory disturbances passed off and prior to his admission he was gaining in weight.

He told the committing physicians that he had gone fishing and clamming the day previous and that he had collected insurance money within a week, whereas he had not been out of the house for ten weeks.

He was admitted August 27, 1901. Physically he presented no symptoms of multiple neuritis; the electrical examination gave a normal faradic and galvanic response; no subjective or objective sensory disturbances; knee-jerks slightly exaggerated; pupillary reaction normal; tremulous tongue and fingers; very slight incoordination in arms and legs; no trophic changes; no speech or writing defect.

The amnesic symptom-complex, the time and place disorientation are in this case so well manifested that I shall consider them in detail.

His memory for recent occurrences was exceedingly defective; thus for months after admission when he was asked as to how long he had been in the institution, he responded that he had only entered the day previous and even after a year he insisted that he had not remained more than two weeks. A few minutes after eating he was quite unable to tell what he had taken. He was sufficiently shrewd to look at the sun when asked the time of the day, and if prevented from so doing his answers were plainly guesswork. He has repeatedly asked to be allowed to go out for a smoke within a few moments of his return from smoking. Almost daily he was told the physician's name, and although he spoke to him as a friend he could not recall his correct name, and often said he had not seen him before. Frequently when seen twice in the same morning, he, at the second interview, had no recollection of the first. He has asked the same questions of his wife at least a dozen times in a half-hour visit. He read the current newspapers but he could not remember after laying down the paper what he had read. The memory of the visits of his wife and children was very quickly lost, and we have on record a letter written to his family the day after his wife's visit in which he complained that he had not been visited. His memory deficiencies he covered up with excuses and fabrications, and hence, on account of his general intelligent demeanor, one could, on superficial examination, scarcely believe such a grave defect existed.

This memory weakness extended beyond the onset of the mental disturbance, and although many events of recent years were recalled, he confused the time of their occurrence; thus he had no recollection of having been out of work for two years before his commitment. He insisted that he had worked up to the time of his admission as a loom-fixer in a cotton-mill, where he had not worked for eleven years, and he asked his wife if his tool-chest had been removed. About this he became so insistent that he was told, to gratify him, that it had been taken home. His father's death which occurred years ago, and also the death of Queen Victoria, passed out of his recollection. He stated that he had canvassed for a life insurance company in the year 1875, whereas it was in 1891. For a long time he said he came directly from the Eye and Ear Infirmary, while the fact was that he had not received treatment there since 1890.

His memory for the events of his early life was intact. He wrote a detailed account of the important personal events throughout his life which corresponded exactly with the history obtained from his family. He gave the correct date of his two marriages, named his children correctly, but was uncertain about their ages.

He retained his elementary school knowledge; could repeat lengthy poems he had learned in his early days, and reproduced quite a creditable poem he composed at the time of a cotton-mill strike.

It was several months before he corrected his place orientation, and since then he held it fairly well. At first he was uncertain, one moment thought he was in the Eye and Ear Infirmary, the next that he was in his old home in England, and again he named the place correctly. This peculiar confusion is well shown in the following conversation which occurred one week after admission. (Where are you?) "I got up very early this morning and came across someone and they brought me here. I had papers to go to the Eye and Ear Infirmary." (What Eye and Ear Infirmary?) "Well—let me see—No last week I went there—No I went to Stockport." (England) (What country is this?) "Why it's England of course—Hold on—This should be Boston. I was laboring under the impression I was in Stockport." (When did you come here?) "I

was at home in Stockport yesterday—No I was not there I was in Taunton yesterday. I was in some kind of a park and I missed my way and I got there. I have been in an institution in Taunton and they treated me for my eyes. I was there ten or twelve years ago." (Incorrect) "I belong near here. If you communicate with the Eye and Ear Infirmary in Stockport you will find I was there this morning." (Where is Stockport?) "It is only five miles from here—Oh, I was thinking I was in England. This is the United States isn't it?" (Why are you under examination?) "I presume you wish to see if my mind is straight." (What do you think?) "I think it is quite justifiable. You see I have been out the greater part of last night. The institution has been wearing on my nerves and I felt tired when I came here this morning. I told them in Boston I wanted to go to the Taunton Eye and Ear Infirmary. You see I have been in Boston trying to find some flowers for Decoration Day. I told one of the bosses at the Eye and Ear Infirmary early this morning that I was going to Taunton to have some questions asked of me to see if I was insane."

This conversation not only shows his confused orientation, but also brings out another important symptom, namely the pseudoreminiscences or falsifications of memory. He mingled old memories with the occurrences of the present time, and recent memories he confused with old experiences. He spoke of having been in the insane hospital twelve years previously for treatment of his eyes; the idea that he had previously been in the hospital he consistently retained, but later said it was for an attack of insanity. In speaking to his wife about this he cautioned her against informing the physicians, as he feared it would delay his discharge.

Many of the patients he spoke of as old friends he had known in England. One of the physicians he claimed to have met in Fall River and at the time of the Boston fire of '72. He spoke of a concert which was given in the hospital as having occurred years ago. He also spoke of only recently having made a visit to Manchester and Macclesfield (England). These pseudoreminiscences originated from actual memories. He had some recollection of the hospital but he transferred it to twelve years before; the physician's face called up a memory which, though

recently received, was transferred to the time of the Boston fire. Together with these phenomena he presented genuine fabrications; as for example, when he said that he had spent the night in the park and had missed his way, and again when one day he calmly announced to his daughter that he had just killed a man on the ward. Many of these fabrications were hasty inventions to cover up his memory defect.

In spite of these symptoms he always displayed considerable mental alertness, discussed the different forms of insurance policies, described the process of cotton manufacture, and argued intelligently his side of the labor problem. He was usually easy-going and good-natured, with only occasional outbreaks of irritability.

He is still in the hospital and appears to have reached a stationary condition. The amnesia for recent occurrences is still present though not so marked. His orientation for place remains correct, whilst for time and persons it is quite faulty. He is sufficiently well to work on the farm but he requires close supervision on account of his forgetfulness and neglectfulness.

Case III.—H. J. D., male; 37 years old; negative family history; common school education; stone-cutter by occupation. He has had gonorrhoea four times; questionable syphilitic infection at 33; excessive and continuous drinking of whiskey and beer since the age of 18; never had delirium tremens. No reliable information could be obtained regarding onset of the psychosis. He was sent to Deer Island Hospital for observation May 9, 1903, with a history of having been drinking to excess for two weeks. While there his mental condition did not change. He never oriented himself correctly, at one time affirmed that he was in Bar Harbor, then Togus, and again that he was at the Relief Hospital. He was unable to remember recent events, and erroneously stated that he had been in the same place three years before for the treatment of pneumonia. He remained quiet and had little to say; was committed to Taunton Insane Hospital May 29, 1903.

Physically: He complained of a general feeling of weakness, of a numbness in the legs, especially in the calves, and of peculiar feelings in the soles of his feet. Sensation to touch normal except in the calves of the legs, where there was dulness, and the

soles of the feet which were hyperæsthetic. Temperature sense, normal. Nerve trunks in the legs very sensitive to pressure; extensor muscles of the legs were weak; when he sat on the edge of the table there was a slight drop of the foot and he could use but very little force to overcome resistance applied to the extensors; he walked with his legs more apart than normal and with a slight steppage gait; he swayed with feet together and eyes closed; was unable to stand on one foot; no weakness of the extensors of the upper extremities. In the flexor muscles of the legs there was a normal galvanic and faradic reaction but in the extensors the faradic excitability was diminished without increased galvanic excitability. No electrical change in the arm muscles. Fine tremors of the tongue; well-defined tremors of the extended fingers and of the leg muscles on exertion. No facial tremors. Knee-jerk absent on the left; slight reaction under reinforcement on the right; Achilles tendon reflex absent; sharp plantar flexion of the toes on plantar stimulation; abdominal, epigastric and cremasteric reflexes absent; sharp elbow-reflex on both sides; organic reflexes normal. No speech disturbance; writing tremulous with a tendency to drop letters.

His memory for recent occurrences and the 'Merkfähigkeit' presented the characteristic defect which I will not stop here to analyze.

The memory of his early life was, as in the other cases, intact, yet the confusion as to the time of the occurrence of events dated back two years, and he could not give in sequence the different places in which he had worked during that time.

His school and general knowledge was not in any way defective. In disposition he was cheerful and unconcerned.

The disorientation and the pseudoreminiscences stood out prominently. For over a month he held the idea that he was a soldier, at first in a soldier's hospital, then later doing camp duty. In keeping with this idea he called the patients soldiers, the attendants officers; the physicians he usually addressed as such, but he called them the doctors of the regiment. The place he considered was the soldiers' home in Togus, Me., saying once that he had been sent by the grand army corps to recuperate, again that he was in Portland looking for a job and went

to Togus for a freak. As to the time of his admission he was uncertain. When asked about it he replied, "Two weeks ago I think." (How many nights have you remained here?) "Why I just came last night but they would not allow me to come in so I came again this morning. You see I went to Portland last night and I came here this morning on the train. I was out here before, you know, and remained two weeks. I was at the soldiers' home in Chelsea last night and left there this morning to catch the Portland boat." When he was told the name of the institution he accepted it without concern, saying that he was run down and his memory was bad, but a few minutes later he returned to his original conception that he was in a soldiers' home.

A week after admission he was transferred to another ward and within half an hour of the change he had forgotten it. He still referred to the patients as soldiers, attendants as officers, etc. His time orientation was never correct, he invariably gave the month as September or October, and the year as 1902. (This was in June, 1903.)

He soon became more uncertain as to his location, though always holding it in some way in connection with the life of a soldier, and for a time when asked about it, gave it either as Togus or the parade grounds where Co. E of Burlington, Vt., was located; this was sometimes in Burlington, at other times in Barre or Montpelier. Finally he held to the idea that he was mustering with Co. E and he abandoned entirely the idea of the soldiers' hospital. On the ward he has frequently asked to be directed to the canteen as he was desirous of having a drink, and he has asked for his uniform which he said he had mislaid. The fact that the others were not in uniform he explained was because they were not at that moment on duty.

When he was questioned closely he was easily cornered and was ever ready with an excuse; thus he would say that he had just taken three or four glasses of whiskey and his head was not clear; then he related how a man asked him to have a drink and escorted him to the canteen; or again he would excuse himself on the ground that he had remained out all night on picket duty and hence was tired.

When questioned as to what he had been doing he related

various fanciful occurrences as the following: "I have just returned from a little town a short distance from here where I went with some of the fellows. They had some kind of a musical festival—you see yesterday I was on guard duty all day at the barracks, the day before we had shooting drill, so a fellow has to go off once in a while." On another occasion he said he had just returned from special guard duty, that he had been commanded by the captain to detect a man in the regiment. One day he directed attention to his suspenders, explaining that he had bought them at a church fair the day previous: "I paid a quarter for them, but they are not worth it, I just did it to help along the church."

These fabrications, many more of which might be enumerated, he always related in a manner-of-fact way, and if told that he had been in an insane hospital for weeks, he was not in the least perturbed, in fact laughed over his mistake.

In July he became oriented for place, relinquished entirely the ideas about his military surroundings, ceased to romance, learned to recognize his physicians but was unable to retain their names and those of the attendants and other patients. His orientation for time did not improve, and the amnesia for recent events likewise remained unchanged. The neuritic symptoms almost completely vanished. He still remains in the hospital with the above symptom-complex.

Case IV.—D. McD., male; 40 years of age; piano stringer by occupation. Father and one brother moderate drinkers; another brother an excessive drinker.

Patient, a graduate of a grammar school, a bright and capable student, learned, after a few years of shifting occupations, piano stringing, and has since been engaged at that business. He was always considered an excellent workman, except for his drinking habits, and he commanded the highest wages. He never married; moderate illicit intercourse but no venereal disease; acute articular rheumatism in 1888 with 'heart complication.'

He began drinking at 19; drank moderately for eleven years, but since has indulged to excess in both whiskey and beer. In 1894 he was sent to Deer Island suffering from an attack of delirium tremens. He was twice arrested for drunkenness. In

November, 1901, he voluntarily applied for admission to Foxboro Hospital for Dipsomaniacs, showing evidence of recent indulgence in alcohol; was very shaky and emaciated, weighing only 122 pounds. No mental abnormalities were noted. He recovered rapidly from the more immediate effects of his excessive drinking, gained in weight, and at the time of his discharge, May 6, 1902, he was thought by his sister to be normal. Nothing could be learned concerning him from that time until early the following July when he called on his sister. He was unable to tell where or how he had spent the intervening time. He seemed exhausted, and complained of feeling weak and easily fatigued. Nothing unusual was detected in his gait, nor were there any sensory disturbances. After a short walk he was fatigued but this was thought to be due to lack of proper nourishment. He slept naturally and did not manifest any alarm at night.

The most prominent feature was his inability to remember recent events, and during the three weeks he remained with his sister he was never able to find his bed, he forgot that he had dined within half an hour after eating, and he would ask when the meal was to be served. He had very little recollection of time, however; he spoke of events of early life, showing that he had a clear remembrance of these remote occurrences. At this time no falsifications of memory were observed.

He was returned to Foxboro July 28, 1902, and was noted as having much loss of memory, confusion as to his surroundings and as to the identity of those attending him; was quite unable to locate his seat at the table or his bed at night. He stated that a bartender, then later a physician, had given him knockout drops which had 'queered' his memory. He then became irritable, disputed the authority of his attendants, accused them of trying to poison him, and invented stories to substantiate his charge. He was very dramatic when examined by the committing physicians; one moment claimed that he was made insane by knockout drops, and the next that he was unbalanced by masturbation. He was admitted to Taunton, October 15, 1902.

Physical Examination.—He was well developed and nourished. Weighed 158 pounds. Temperature normal. Accentuation of the second aortic sound. Exaggerated knee and elbow-reflexes.

Prompt skin-reflexes. Sharp tendo-Achilles reaction. Pupillary reaction not disturbed. No paralyses or muscular weakness. No anæsthesia or paræsthesia. No tenderness along nerve-trunks. Good coordination. Fine tremors of the tongue and extended fingers. Enunciation clear. Writing not defective. No trophic changes. Absolutely no quantitative or polar changes in any muscles with either the galvanic or faradic currents.

In contrast with the previous case this patient made no attempt to cover up his memory defect, and hence it soon became very prominent. He was seen a few hours after his admission and he was unable to tell how long since he came or with whom he came. His memory defect revealed itself in many ways. Interviews of a half-hour's duration he considered as continuing an hour or more. He never could find his place at the table or his bed at night. In playing cards he always forgot the trump unless it was before him. He could not remember a few minutes later that he had just returned from a walk. Immediately after shaving he could not recall the process until he felt his face.

His '*Merkfähigkeit*' was very defective. He was given the physician's name and four numbers to remember. Thirty seconds later he could only reproduce three of the numbers, whilst one-half minute later the name and the numbers were all forgotten. A watch was shown him and he was asked to note the time and describe the watch. Sixty seconds later when asked the time he replied: "I have not seen a watch this morning." Of three words which were given him only the last was remembered when he was immediately asked to repeat. He could not reproduce one essential point in a letter he had just read. Two headlines in a newspaper were read, and when he had finished reading the second he had forgotten the first, and two minutes later he denied that he had seen a newspaper.

He had a normal memory for events up to the time of his first committal to Foxboro and although he retained the names of the physicians there, he displayed a confusion of memory dating from that time. All his earlier experiences he recalled accurately. He described in detail the route he would take in walking between two designated points in different localities of

the city of Boston. Similar tests were frequently tried and each time he was correct in his narration.

He could enumerate every State and its capital in the Union; multiplied easily and correctly; calculated interest with surprising rapidity; and in every way demonstrated that he had a good grasp on his school knowledge.

He very soon oriented himself for place and has not since been confused in that respect. He was scarcely ever able to tell whether it was morning or afternoon; had no idea of the day or month and his answer he readily admitted was guesswork. Strange to say he usually gave the correct year. He only learned the name of one physician, and he claimed that he had seen all the physicians years ago.

Two weeks after admission he gave evidence of hallucinations of hearing; these later became so insistent that he would stop in the middle of a sentence to listen. At first they were not connected with any person in particular, but later he thought it was his friends who were talking. In this way he was told that he was God and that he was in Heaven; an idea to which he did not again refer. The content of most of these hallucinations related to previous experiences. Two weeks later they entirely vanished and never again reappeared.

He presented beautifully the memory falsifications of the chronic alcoholic delirium, and one delusion in connection with the pseudoreminiscences he retained throughout, which formed the basis of numerous fabrications. This most prominent central delusion of memory was that he had been poisoned; at first he affirmed that the physicians at Foxboro had attempted to poison him, and he related with minute details a story to the effect that one of the physicians had attempted to "fix" him; offered him a glass of poison and then stood in fear and trembling after the patient had swallowed the poison. He further elaborated this by declaring that the poison had shattered his memory and that he was transferred to Taunton because they were unable to poison him at Foxboro.

This fabrication he repeated daily and several times during one interview, once saying in this connection, "I don't know whether I have told you this before—probably I have told it a dozen times, but I wish to set myself straight about it." He

at times modified the story, though each time relating the conversations which he had declared had taken place. Thus one day he said that the physicians had attempted to get rid of him in other ways and finally came to him saying, "If we don't get the best of you, we will poison you."

His next version was that he had fought with the physicians because he learned that they had been bribed to poison him and it was several days after the fight that the poisoning was attempted.

He further elaborated by stating that he had met one of the physicians in M——'s saloon in Boston, who informed him that he was to be committed to an insane asylum and poisoned. Soon the physicians in Taunton were involved and were accused of having attempted to poison him in M——'s saloon: Thus when relating the story he said, "You know all about it. I saw you in M——'s saloon, and you were sitting at the table talking, when you turned, looked at me, saying, 'Is that you McD.?' M—— said, 'Hush! He's onto everything,' and you saw M—— trying to poison me."

Then again it was the Foxboro physicians he had seen in the saloon, and he told how years ago he had seen one of the physicians in the saloon, "he tried to poison me, but when he saw that he could not kill me that way he shot at me five times, then turned the revolver at his own head and blew his brains out." He at another time told a singular story with the same details but the saloon-keeper did the shooting.

One of his latest statements is that the Taunton physicians were in Foxboro and tried to poison him, and being unsuccessful, shot at him. At another time it was at the funeral of the saloon-keeper he was given the poison. Another prominent fabrication was that the saloon-keeper set the Boston fire of '72, after having previously poisoned the horses so that they were unable to haul the fire engines. (The fire horses were at that time suffering from epizootic.) He says that he was standing on his shed and saw the saloon-keeper apply the torch. This he usually told in connection with the story that the saloon-keeper had poisoned him.

There was considerable stereotypy in his talk, a characteristic which Soukanhoff pointed out as among the five chief symptoms.

Though friendly at first he soon began to manifest marked irritability, and, after asking him a few questions he usually became incensed and accused the examiner of having attempted to poison him, etc. Under ordinary conditions he was dull and indifferent and only exhibited this irritability to the physicians and nurses under slight provocation.

He has now remained in the hospital almost a year and the amnesia for recent events, the disorientation for time and persons and the tendency to fabrication, all remain essentially unchanged. He has gained greatly in weight but otherwise his physical condition offers nothing of importance.

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PARANOID DEMENTIA.¹

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In this paper, the title "Paranoid Dementia" is used as synonymous with *Dementia Præcox*, Paranoid Form.

The term "paranoia" has come to be accepted as one eminently appropriate for designating a clearly defined psychosis, a mental disease gradual in its onset, chronic in its manifestations, and characterized especially by systematized delusions with slight, if any, mental deterioration.

Irritating hallucinations and delusions of persecution are also prominent symptoms of this form of insanity; in fact, they form so constant and pronounced a feature in paranoia, that when conspicuously present, by some writers and statisticians they are regarded as sufficiently distinctive to settle the question of classification irrespective of any accompanying mental deterioration more or less evident. It seems necessary, therefore, to differentiate between paranoia and paranoid symptoms.

If mental deterioration, however slowly advancing in a given case, is not held as sufficient to exclude it from ranking as paranoia, no precise margin to this class can be established and it must be made to include a wide variety of cases presenting persecutory delusions, conforming to all grades of insane logic, from those elaborately systematized to others lacking all semblance of cohesion; and, also, varying grades of mental impairment, from those in which deterioration is barely discoverable to others where it is pronounced and rapidly progressive.

From medical papers and hospital records, the impression is obtained that, among hospital officials especially, there is a lack of uniformity in the conceptions of what should constitute the symptom-group of paranoia, which leads to more or less confusion in the literature of morbid psychology. A solution of the difficulties met with in classifying paranoid conditions, in conformity with easily recognized standards, should be welcomed by all alienists.

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The requisite formulas for this work are provided in Kraepelin's system of classification. Kraepelin regards as examples of pure paranoia only those infrequent chronic cases which present systematized delusions of persecution with long deferred deterioration; while he classes all other cases exhibiting paranoid symptoms—those with hallucinations and delusions of a persecutory bearing and rapid development, changing, disassociated or fully systematized as it may be, but in all of which a process of dementia is manifest or can be confidently predicted at an early stage, as paranoid forms of dementia præcox.

Dementia præcox, thus used as a class or type-name, is very expressive and seems to be the most satisfactory one so far suggested to designate this deterioration process. While it may appear to some as more appropriately applied to young subjects, its usage never seems inconsistent, even when referring to middle-aged patients, by those who regard the term in its broad and true sense.

The number of cases, having as common symptoms numerous hallucinations and somatic delusions with the inevitable dementia, is large and consequently includes those widely varying as to the early or late appearance of mental reduction as well as to the rapidity with which the deterioration process advances. Consequently, the qualifying term "paranoid forms" is appropriately subdivided into two groups. Thus, the term dementia præcox, paranoid form, becomes sufficiently broad in its application to include not only the cases formerly classed by Kraepelin under the more restricted terms, dementia paranoides and fantastic paranoia, but a large number of cases classed by others as primary dementia, mania, melancholia, paranoia, etc.

The first group of the paranoid form includes such cases as present absurd, changing, non-systematized delusions of persecution and grandeur. A gradual onset covering weeks is the rule, but when active mental disturbance sets in, auditory hallucinations and delusions of persecution quickly develop. Some degree of mental enfeeblement can be detected early in the course of the psychosis, which terminates in advanced dementia, generally within two or three years.

The second group embraces a class of cases in which mental

decay is less pronounced and less rapid in its progress and where delusions more or less coherent and systematized are entertained. Hallucinations, especially of hearing, are misinterpreted. Somatic illusions, or delusions, are referred to imaginary agencies, or supposed enemies. Occasionally, delusions of grandeur are exhibited and frequently the delusions are ridiculously absurd and marvelously whimsical. Some patients coin words to characterize their illusory sensations. It is not unusual for patients in this group to show "method in their madness" and with some approach to logic, defend for a time their false notions, since mental deterioration advances but slowly. Yet eventually, after a term of years, few or many, they become so far demented that their delusions vanish, or fade out of prominence and cease to be actuating motives for conduct.

A tabulation and analysis of all the cases of paranoid dementia admitted to the Connecticut Hospital for the Insane for a period of nearly three years from Oct. 1, 1898, to July 1, 1901, were made to demonstrate the clinical advantages arising from the adoption of this method of classification.

In the period specified—33 months, 1210 cases of insanity were admitted. The diagnosis recorded in 56 of these cases was dementia præcox, paranoid form. Twenty-one cases were assigned to the first and 35 to the second group. Hereditary predisposition was admitted in regard to only 16 cases and was positively denied in 24; while the facts necessary to determine this question could not be obtained in the histories of the remaining 16. It is extremely probable that faulty heredity was a factor in a much larger number of these cases, as the facts which go to establish such conditions are often overlooked or intentionally repudiated by relatives.

The onset of the disease was described as sudden in only four cases. In the other 52, the usual prodromes had been manifested for periods varying from a few months to many years.

The average duration of the disease before admission (both groups included) was above three years. The evident hesitancy on the part of interested friends to place patients belonging to the second group of paranoid dementia, under institution restraint at an early period in the development of their insanity,

is accounted for by the gradual approach and mild character of the disease in its incipient stage. Almost invariably, the prodromal history was one of depression and vague feelings of unrest and anxiety. Headache and insomnia were frequent symptoms. The patients were suspicious, as a rule, and sooner or later characteristic auditory hallucinations appeared, affecting the mental attitude and in some measure suggesting conduct.

In only two out of the 56 cases was there no record of auditory hallucinations. In one of these cases, the onset antedated the first admission to the hospital by at least 15 years, and the early manifestations may have faded from the recollections of family or friends, or even escaped their untrained powers of observation. This patient retained her old persecutory delusions while she expressed the conviction that she was endowed with superhuman qualities.

The second case, in which auditory hallucinations seemed to be absent, was one of nine years' duration. For seven years, this patient had been an inmate of the Connecticut Hospital, and no record of hallucinations in the case could be found. When originally committed, this case was classed as a paranoia. But, on re-admission to the hospital after a few months' absence, the advancing degree of mental deterioration exhibited at the staff meeting examination relegated it to the second group—the paranoid form of dementia præcox.

A positive diagnosis of paranoid dementia cannot be made in the earlier stages of mental disorder in the absence of evident auditory hallucinations. Such hallucinations, though changing in some respects, are persistently present to worry or disturb the patient. Imaginary voices accuse, malign, or threaten throughout the early stages of the fully developed psychosis. Sometimes at a comparatively early and often at a later period, they flatter the victim and serve to buoy up delusions of wealth or importance. As a rule, auditory hallucinations in these cases subside in time and eventually become of slight moment.

Accompanying auditory hallucinations, there are active and absorbing delusions of persecution. Such delusions are many-phased as a rule, expressing the patient's disordered views of his

environment in terms which are frequently absurd in the extreme. In short, a wealth of delusions is to be expected in cases representing this class of mental diseases. These delusions are feebly held, and are, therefore, changeable and incoherent in cases of the first group; while, in those belonging to the second group, they present some degree of coherence, bear some relation to, or some connection with, a central, master delusion, thereby constituting a feeble or circumscribed system which the patient adheres to for a number of years.

The abundant delusions, as well as the expressive language, fitly characterized as "fantastic" which the patient sometimes uses to describe his conceptions of personal experience or sufferings, result from the fact that his intellectual endowment is not completely overwhelmed at first. Meantime, the patient, harassed by threatening delusions and spellbound by exasperating hallucinations, views experience from a new standpoint and cannot depend upon his judgment to correct false impressions. The memory is not extinguished and the imagination has free scope and license. Hence, certain patients often invent words and terms to portray their fancied unique experiences. Perhaps this explanation also applies to the somatic delusions which are very common in cases of paranoid dementia. Forty-two of the fifty-six cases presented this symptom. One felt a "sharp jab" in his leg, and immediately his trousers would "fly out." He attributed this sensation to electricity, saying he supposed it to be scientific treatment. Another claimed that a powerful blower was inserted in one ear, thus blowing out his brains on the opposite side. Another said his physician at home cut his throat and pushed a snake into his stomach through the wound. One was influenced by some mysterious power, like electricity or magnetism, and often arrested the movements of his head stock-still to "jar off the influence." One woman imagined she had a machine in her body working to arrest the process of breathing. Another insisted that various parts of her body had been removed and that corresponding parts of another person had been put in the place of those removed.

Women appear less inclined to charge their imaginary enemies with the improper and absurd application of scientific agents, but rather complain of vague indefinite symptoms of disease, or

the removal of internal organs; and their delusions are quite frequently referred to the sexual organs.

Some patients suffering from paranoid dementia react to their persecutory delusions without warning. Out of the 56 cases embraced in this study, one threatened, and six attempted, suicide to escape from imaginary tortures and fifteen committed such acts of violence towards others that each was for a time regarded as dangerous.

But granted that auditory hallucinations and delusions of persecution are the most conspicuous symptoms of paranoid dementia, there is another and a decidedly more essential feature of this disease, which must be associated with delusions and hallucinations in order to complete and typify the symptom-complex, and thus gauge at their correct value, the active manifestations of insanity, adjusting each to its relative importance in a comprehensive view of the psychosis. This denominating feature is the underlying chronic process of advancing enfeeblement, or dementia.

The determination of the existence or non-existence of an underlying advancing process of mental deterioration in ordinary cases of insanity, is the key-note to Kraepelin's theories of mental disease and its classification. Hence, it becomes important to establish as early as possible the facts with regard to mental deterioration in a given case.

Since persecutory delusions with hallucinations appear in other forms of mental disease, a careful differentiation must be instituted in all cases.

In pure paranoia, there will be a more gradual onset with an absence of the emotional depressive prodromes which usher in paranoid dementia. There will also be but few and unimportant hallucinations. The delusions will not crop out suddenly, but gradually develop on constitutional lines, in a person originally ill-balanced, forming some association or system with previously strained ideation. The memory will remain keen, and new experiences, even if misjudged, will gain access to the mind.

In the depressive form of manic-depressive insanity, the onset will be much more sudden. Mental action will be retarded; consciousness will be more or less clouded in the early stages,

and there will be poverty of speech instead of fantastic versions of disordered sensations.

In melancholia, the age and condition of involution must coincide; hallucinations will be inconspicuous, and self-accusations will be noted.

The hallucinations and delusions incident to alcoholic cases can be identified by their character and the intemperate habits of the patient.

The beauty as well as the utility of the Kraepelin classification appears in reducing to their proper relations exciting causes, emotional disturbances and episodes in the history of a case, each to its proportionate importance. Paranoid dementia is predicated not alone upon such symptoms but upon these manifestations, plus the evidence of mental deterioration; which once definitely established, may be depended upon to advance, although at varying rates of progress.

As a rule, a correct diagnosis of paranoid dementia can be made upon the first admission of such a patient to the hospital. And, when once correctly made and recorded, it will stand for all subsequent developments in the case, as it clearly foreshadows the natural trend and outcome of the disease.

Among the 56 cases considered in this paper, ten were readmissions, and it becomes especially interesting to note how these cases were diagnosed by the medical officers of the same hospital before, as well as after, Kraepelin's luminous and logical ideas upon classification were adopted as the hospital standard.

As would be expected, all the readmitted cases of paranoid dementia belong in the second group. Case 1438 was first admitted to the hospital in 1877, having been disturbed mentally for three months. She was depressed, her conversation dwelling on religious subjects; she refused food through fear of being poisoned, and frequently asked for knives with which to kill herself. After a residence of ten days in the hospital, she was discharged with a diagnosis of "not insane." In 1885, she was readmitted, presenting delusions of suspicion and persecution. She accused her husband of having been the cause of all her trouble. She believed the neighbors were guilty of imaginary

offences and was extremely suspicious in general. The diagnosis recorded upon her second admission was "chronic mania." After remaining one year in the hospital, she was discharged as "stationary." In October, 1900, she was readmitted when the diagnosis paranoid dementia was unhesitatingly made.

Case No. 2080, first admitted in 1881, had been mentally unbalanced for one year, the disease dating from her confinement. Her mind was full of delusions varied in character. She imagined she was to be poisoned; thought she had been dead for a period of five years, during which time many things hidden for ordinary mortals had been disclosed to her. She expressed delusions to the effect that physicians had caused her many imaginary diseases of the internal organs. The diagnosis recorded upon that admission was "puerperal mania."

After a few months' treatment in the hospital, she was discharged, but returned to the hospital in 1890, still complaining of indefinite ailments but exalted by ideas of self-importance. At the time of her second admission, the diagnosis was "chronic mania." In 1893, she was discharged and remained away seven years. In 1900, she was admitted again under the diagnosis of "paranoid dementia."

Case No. 1708 was admitted in 1895. She had delusions of persecution, imagining that most persons were hostile to her and might kill her. She was greatly annoyed by auditory hallucinations. The disease had manifested itself for a period of between two and three years on admission, and was diagnosed as "chronic melancholia." In July, 1900, she was discharged, and in July, 1901 was readmitted. This time her disease was diagnosed as "paranoid dementia."

Case No. 5768 was admitted in 1891, being recorded as a case of acute melancholia. Although the friends claimed the attack was less than one month in duration, ten years previously, soon after confinement, she was so insane that she had killed her baby. On her second admission, she dreaded some impending calamity and attempted suicide. She remained in the hospital for nine years continuing at all times to entertain morbid fears. She then returned home, but was brought back at the end of six months and this time classed as a case of "paranoid dementia."

Case No. 7647, admitted in 1896 under the diagnosis of chronic melancholia. Her disease had been of eight years' duration, developing gradually and was characterized by auditory hallucinations with delusions of fear and persecution. In 1897 she was discharged "improved" and in 1900, was readmitted and classed as a case of "paranoid dementia."

Case No. 7075, was admitted in 1897 as a case of "acute mania" of six months' duration. She was affected with delusions of suspicions—accused her husband and other relatives of hostile intention. At one time she had delusions of exaltation, calling herself the "Queen of Heaven." In 1899, she was removed from the hospital, but was readmitted in 1901 under the diagnosis of "paranoid dementia."

Case No. 188 was admitted in 1869 with a diagnosis of "acute mania." After five years she was discharged and remained at home until 1898, when she was readmitted. Annoying hallucinations and delusions had characterized her disorder from its inception although they had faded to a great extent at time of her second admission, when the diagnosis of "paranoid dementia" was made.

Case No. 6788 was admitted in 1894 as one of "paranoia." She had silly delusions of persecution. She suspected persons of reading her mind and imagined that enemies prevented her marriage to a certain gentleman. She was discharged and readmitted twice. On her second admission "paranoia" was the registered form of the disease, but on the third admission, the diagnosis was "paranoid dementia." Her mental deterioration had not advanced rapidly, although content of thought was decidedly limited compared with what it formerly had been.

Case No. 6584, was admitted from the Connecticut State Prison in 1893, being diagnosed as "acute mania." He claimed to have been wrongfully imprisoned, and that he could talk with God. He imagined himself a victim of hostile persons. After a year's residence in the hospital, he was discharged, but was readmitted in 1896, with the same symptoms. This time, he was classed as "acute melancholia." He was subsequently discharged and later returned as a case of "acute melancholia." In 1900, he was again admitted. He imagined men crowded into his cell

and held conversation with him. He also claimed to hear little men talking in his stomach. This time his case was diagnosed as "paranoid dementia."

Case No. 8898 was first admitted to the hospital as one of "paranoia" but was subsequently discharged and readmitted. Upon his second admission in 1899 his case was diagnosed as "paranoid dementia." He imagined himself affected by currents of electricity or gas manipulated by various persons. His conduct was so threatening that he was regarded as a dangerous patient.

These ten cases are now found to present kindred features and it is probable that not only has their common relationship existed from their onset, but that each would have been diagnosed as the paranoid form of dementia præcox at the first, and all subsequent admissions had Kraepelin's views of this group of deteriorating mental disorders been adopted prior to the earliest commitment of the cases under consideration. As a matter of fact, these ten individuals have now furnished 25 case numbers to the hospital statistics. Several have previously figured in printed tables under two forms of mental disease. As cases, they have been classed in hospital reports as follows:

One case "not insane;" one case "puerperal mania;" two cases "chronic mania;" three cases "acute melancholia;" two cases "chronic melancholia;" three cases "paranoia," and now, these cases representing in published reports five forms of mental disease, as well as the larger class of cases "not insane," are found to present such essential features of resemblance that all naturally fall into one class, the paranoid form of dementia præcox.

Thus tabulated conclusions, obtained according to former doctrines of classification, when compared with those determined under the newer views (adopted in 1898 at the Connecticut Hospital for the Insane), expose the weakness of former theories and suggest the questionable value of old statistics of insanity.

Some temporary or superficial condition of the patients, at the several times of their admissions, must have determined the official medical decision as to their form in all the previous admissions of these ten cases.

Such confusion in classification will not occur again in this institution, but it is not probable that every long established hospital for the insane can furnish a parallel record of changing diagnosis with readmitted cases.

If the adoption of Kraepelin's conception of the deteriorating psychoses, as a working hypothesis (and what more than a working hypothesis can be claimed for any scheme of classification?) will enable alienists to readily locate in their appropriate, permanent class all such cases when examined at any stage of the disease, is not this indicative of a decided progress in the study of insanity?

PROCEEDINGS OF THE SECOND MEETING OF THE
ASSOCIATION OF ASSISTANT PHYSICIANS
OF THE OHIO STATE HOSPITALS.

The second meeting of The Association of Assistant Physicians of The Ohio State Hospitals was held at The Toledo State Hospital October 7 and 8, 1903. The following members were present: Drs. Jas. F. Kelly, Katharine R. Moses, Cleveland; Drs. William H. Pritchard, Ralph W. Holmes, Walter H. Buhlig, Gallipolis; Drs. George T. Harding, Jr., Isabel A. Bradley, Columbus; Drs. George R. Love, Nelson H. Young, Jeremiah H. Metzger, Mary Ketring, Frank J. Latshaw, F. D. Ferneau, Toledo.

FIRST SESSION, 2.30 P. M.

Dr. G. T. Harding, Jr., presided.

Dr. Henry A. Tobey, Supt. of The Toledo State Hospital extended a most hearty welcome to the Association and gave an address on the Relation of the Assistant Physicians to the Hospital Management.

Ex-Governor Charles Foster, President of the board of The Toledo State Hospital, gave a brief account of the progress made in the treatment of the insane in Ohio during the past fifteen years.

The minutes of the first meeting of The Association which was held at Columbus, Ohio, July 16, 1903, were read and adopted.

Dr. F. D. Ferneau presented an interesting case of the gasoline habit in a boy eight years old, who was a patient in The Toledo State Hospital. Drs. Love, Tobey and Holmes discussed the case.

Dr. James Kelly, Cleveland, read a paper entitled, "Suggestions on the Nature and Treatment of Delirium Tremens." Discussion by Drs. Latshaw, Pritchard, Love and Young.

Dr. Wm. Pritchard, Gallipolis, read a paper entitled "Dementia Præcox." Discussion by Drs. Holmes, Bradley, Tobey, Young and Kelly.

A telegram from Dr. Irwin H. Neff of Pontiac, Michigan, Sec-

retary and Treasurer of The National Association of Assistant Physicians, extending congratulations to the members of this Association, was read.

Adjournment at 5.20 P. M.

SECOND SESSION, OCTOBER 8, 1903; 9.00 A. M.

President Harding in the chair.

Dr. Isabel A. Bradley, Columbus, read a paper; subject, "A Case of Chorea Insaniens with Report of Autopsy." Discussion, Drs. Love, Buhlig and Pritchard.

Dr. Nelson H. Young, Toledo, read a paper; subject, "The Use of Thyroid Extract in the Treatment of Insanity, with Report of a Case." Discussion, Drs. Kelly, Metzer, Love, Buhlig, Young and Tobey.

Dr. Walter Buhlig, Gallipolis, read a paper; subject, "General and Special Methods in the Postmortem Examination of the Brain and Spinal Cord (with practical demonstrations)." Discussion, Drs. Metzer, Young and Bradley.

A communication from The American Congress on Tuberculosis was read requesting the Association to appoint a commission to represent the society in Washington, April 1905. Drs. Pritchard and Ferneau were placed on this commission.

Dr. Ralph Holmes called the attention of The Association to the movement in the State towards the organization of a Central Pathological Institute.

Dr. George Love presented the following resolutions:—

We, The Association of Assistant Physicians of the Ohio State Hospitals, believing that a well-directed central laboratory for teaching and research in connection with the State Hospitals would be a most efficient means of advancing the medical work in these hospitals, and of fostering a scientific spirit among the physicians connected with the various State hospitals; and believing that such an institution would materially enlarge our knowledge of the nature, cause, treatment and prevention of the diseases for the care of which these hospitals are established, thus enabling us to prosecute our work with more satisfaction and success; and believing that the scientific contributions from it would bring credit and renown to the State of Ohio; therefore be it

Resolved, That the Association of Assistant Physicians of the State Hospitals desires to coöperate with the Committee on State Pathological Institute of the Ohio State Medical Association; and be it

Resolved, That the Association of Assistant Physicians of the Ohio State Hospitals, as an organization and individually, pledges itself to support in any way the promotion of plans having for their object the establishment of a State Pathological Institute of Ohio; and be it further

Resolved, That the Legislative Committee of the Association of Assistant Physicians of the Ohio State Hospitals be instructed to use its best endeavors to aid the movement for a State Pathological Institute whenever and wherever opportunity arises.

The resolutions were adopted by the unanimous vote of the society.

Dr. Pritchard moved that a vote of thanks be extended to Dr. Tobey and his staff for the courtesies and kind hospitality which we had received. Carried.

Adjournment at 12.20 P. M.

ISABEL A. BRADLEY, *Secretary*.

Notes and Comment

THE CRAIG COLONY PRIZE.—A prize of \$200 is offered by Dr. Frederick Peterson for the best original essay on the Etiology, Pathology and Treatment of Epilepsy. The conditions to be complied with are as follows:

1. The paper must show original research work.
2. The subject-matter of the essay shall not have been previously published.
3. The manuscript submitted shall be in English and be sent to Dr. Peterson at 4 West Fiftieth St., New York City, before September 30, 1904. The successful manuscript becomes the exclusive property of the Craig Colony.
4. Each paper submitted must be accompanied by a sealed envelope containing the name and address of the author and bearing on the inside a motto or device which is also to be inscribed upon the essay.

The award will be made by a committee of the New York Neurological Society and the result announced at the annual meeting of the Managers of the Colony the second Tuesday in October, 1904.

Any additional information about the matter may be obtained from Dr. W. P. Spratling, Sonyea, N. Y.

ANNUAL MEETING OF FRENCH ALIENISTS.—The thirteenth annual meeting of Alienists and Neurologists of France and the French-speaking countries was held at Brussels August 1-8, 1903. The presidential address by Dr. Francotte was entitled "la Timidité et l'état d'intimidation." Dr. Claus of Antwerp made a report on "Catatonie et Stupeur," following which a number of papers were read on subjects more or less connected with catatonia or dementia præcox. Another report was made by Dr. Klippel on "Histologie de la Paralyse Générale." This was one of the most interesting papers read during

the session and was followed by a number of papers on various aspects of paresis. The last report on "Treatment de l'Agitation et de l'Insomnie dans les Maladies Mentales," by M. Trenel, was followed by a number of papers on various subjects. In all, over sixty papers were read.

The entertainments and social events included visits to Gheel, to Spa, to Lierneux, and to other nearby places which had a scientific or popular interest, and in each place the excursionists were most cordially received. Two banquets were also given, and altogether the meeting was a most successful one.

APPOINTMENT OF DR. WM. A. WHITE.—The appointment of Dr. Wm. A. White to the superintendency of the Government Hospital for the Insane, Washington, D. C., to succeed the late Dr. Richardson, is a deserved tribute to the good work of a young man in the field of psychiatry, done during his nine years' service in the State of New York.

Dr. White was born in 1870, in the city of Brooklyn, and received his preliminary education in the public schools of that city. From 1885 to 1889 he was a scholarship student at Cornell University at Ithaca, and from 1889 to 1891 he attended medical lectures at the Long Island College Hospital, in Brooklyn, from which he was graduated with the degree of M. D. in 1891. He then served as a resident member of the staff of the Eastern District Hospital, Brooklyn; the Alms House and Work House, Blackwell's Island; and the Long Island College Hospital; and in April, 1892, was appointed, after a civil service examination, assistant physician in the State Hospital service and became fourth assistant physician at the Binghamton State Hospital.

Here his steady attention to the details of his work and his interest in the clinical scientific side of psychiatry raised him successively through the third and second to the first assistantship. He has served as first assistant physician from the time of the death of Dr. Eastman, a period of about three years.

In August last he was appointed by President Roosevelt to his present position.

He is principally known to the medical profession by his work at the New York State Pathological Institute when it was under the direction of Dr. Van Gieson. He has published, among other

papers, "The Physical Basis of Insanity and the Insane Diathesis"; "The Criminal; His Social and Legal Status and the Philosophy of Reformation"; "The Early Diagnosis of General Paresis"; "Mental Dissociation in Alcoholic Amnesia"; "Mental Dissociation in Psychic Epilepsy"; "Insanity; Alcoholic and Drug Intoxication and Habituation"; "Preliminary Experimental Studies in a Case of Amnesia with a Discussion of their Psychopathological Significance"; "The Retraction Theory from a Psychical Standpoint," and "The Geographical Distribution of Insanity in the United States," which latter was read before the National Geographic Society at Washington.

Dr. White has a strong scientific bent and by training and previous studies is well fitted to develop the Government Hospital in the line of the newer psychiatry. He has health and energy and is fully equal to the arduous administrative demands of his new position. We cannot forbear expressing the hope that a rearrangement of the business methods of the institution may be feasible, so that the superintendent can be relieved of an overwhelming burden of detail business. He should cease to be the disbursing agent and should no longer be required to devote his best energies to non-medical affairs.

MEETING OF THE BRITISH MEDICAL ASSOCIATION.—The seventy-first annual meeting of the British Medical Association was held at Swansea, July 28, 29, 30 and 31. The Section of Psychological Medicine held two meetings on the 30th and 31st. At the first Dr. Hyslop opened a discussion on "The Relation of Alcohol to Mental Disease," and was followed by Dr. Archdall Reid on "Human Evolution with Especial Reference to Alcohol," following which there was a lengthy discussion. A paper by Miss Alice Johnson and Dr. E. Goodall was then read on "The Action of the Blood Serum from Cases of Mental Disease upon the *Bacillus Coli Communis*." On the next day the session was opened by a paper by Dr. W. Maule Smith on "The Nature of *Fragilitas Ossium* in the Insane." Dr. Shuttleworth read a paper on "Some Slighter Forms of Mental Defect in Children and Their Treatment." Dr. Charles Mercier read a paper on "The Classification of Insanity." Dr. Yellowlees opened a discussion on "The Treatment of Incipient Insanity." Owing to lack of time the following

papers were not read or read only in part: "The Relationship of Wage, Lunacy and Crime in South Wales," by Dr. R. S. Stewart; "Psycho-therapeutics, its Use and Abuse," by Dr. Schofield; "Premature Dementia of Puberty and Adolescence," by Dr. W. Lloyd Andriezen; "Relation of Hysteria to Insanity," by Dr. Edridge-Green; "Syphilis in the Insane (apart from General Paralysis)," by Dr. Pugh; "Freund's Theory of the Origin of Obsessions," by Dr. Conolly Norman; "The Relation of Mental Symptoms to Bodily Diseases," by Dr. Nathan Raw.

A. E. MACDONALD, LL. B., M. D.—The recent action of the Council in selecting Dr. Macdonald to fill the office of President of the Medico-Psychological Association, made vacant by the death of the lamented Richardson, has given a deserved recognition to one of its oldest and best-known members, both at home and abroad. Dr. Macdonald has been actively connected with the care of the insane in the city of New York during the past thirty-four years, and is well known to the alienists of America and Europe.

He was born in Toronto, Canada, in 1845, was educated at Toronto Model Grammar School and Upper Canada College, and commenced to study medicine at Toronto University, but subsequently went to New York and completed his studies at New York University, receiving the degree of M. D. in 1870 from that school. He later pursued the study of law at the same university and graduated with the degree of LL. B. in 1881.

In 1874 he was appointed Lecturer upon Medical Jurisprudence in New York University and afterwards Professor of Medical Jurisprudence. Later he was made Professor of Psychological Medicine and Medical Jurisprudence, and now holds the title of Emeritus Professor at the same university.

Shortly after his graduation he was appointed House Physician, Hospital for Epileptics and Paralytics, Blackwell's Island, 1870; Chief of Staff, Charity and Allied Hospitals, Blackwell's Island, 1871; Resident Physician, New York City Asylum for the Insane, Ward's Island, 1874, and Medical Superintendent of the same, 1875.

He was made the General Superintendent of the New York City Insane Asylums, March 1, 1886, which comprised the Recep-

tion Pavilion for Insane, Bellevue; New York City Lunatic Asylum, Blackwell's Island, and branches on Ward's and Hart's Island; New York City Asylum, Ward's Island, and branches on Randall's Island and Central Islip, Long Island.

Through his efforts, and upon his recommendation, the colony at Central Islip, Long Island, was founded, and the city purchased from the State the Immigration Asylum on Ward's Island and thus increased its accommodations for the insane, whereby he was enabled to abolish the branch institutions, and to remove the Blackwell's Island division of women patients to Ward's Island.

In 1896, New York City transferred its insane to State care, and he was again appointed General Superintendent. In 1900, the Legislature made three separate divisions of the Manhattan State Hospital, and he was made Superintendent of the Manhattan State Hospital, East, of which he had been the first Superintendent, in 1875, shortly after it was built, and which he organized and brought it into prominence by his pronounced executive ability.

In 1881, he was called by the United States Government to testify as insanity expert in the Guiteau trial, and has since appeared in many important cases. Many reforms in asylum management are due to his efforts, and it can be truly said of him as an executive officer:

"Quick of dispatch, discreet in every trust;
Rigidly honest and severely just."

Those who read his account of the journey to Madrid in April of last year as a delegate from the American Medico-Psychological Association to the International Medical Congress and the interesting report of the subsequent proceedings, will join with the editors of the JOURNAL in the expression of the wish that Dr. Macdonald may be induced to write more frequently than he has done in recent years. Formerly, as the appended list of titles will show, he was a diligent and effective writer and illuminated a variety of subjects by his ready and facile pen: "The Examination and Commitment of the Insane," AMERICAN JOURNAL OF INSANITY, 1876; "General Paresis," AMERICAN JOURNAL OF INSANITY, 1877; "Clinical Lecture on Mania, Medical Record,

New York, 1879; "Clinical Lecture on Melancholia," 1879; "Clinical Lecture on Dementia, Idiocy, Imbecility," Medical Record, 1879; "Clinical Lecture on General Paresis," Medical Record, 1880.

RESIGNATION OF DR. COWLES.—The news of Dr. Cowles' resignation from the superintendency of the McLean Hospital at Waverley, Mass., will be received with regret and surprise by a host of admiring friends; regret, because men, being selfish, accept with bad grace the falling out of rank of a leader; surprise, because no one had dreamed that a brain that is still full of soft arteries was not to keep on doing its effective work in its wonted way. Members of the Roman Senate sat for life, but a special law provided that no senator, after sixty, should be summoned to attend his duty. It may that Dr. Cowles, in retiring from active service at McLean, claims for himself some such exemption, and no man will grudge him a privilege so richly earned. Albeit, to most of his brethren, it will seem that his retirement creates a void which no other can fill, since he occupies a unique position in the specialty which he has so long adorned. Neither will any man deem it invidious to characterize our retiring brother as *facile princeps* in American psychiatry. The tale of Dr. Cowles' life and achievement was told in this JOURNAL nine years ago¹ on the occasion of his election to the presidency of the American Medico-Psychological Association, and it need not be repeated here. One may recall, however, that he was at the Hartford Retreat, Conn., under Dr. John S. Butler, leaving that institution to be commissioned Assistant Surgeon of the United States Army in 1863. He saw active and honorable service in the Civil War, and, after a military career extending over nine years, resigned in 1872 with the rank of Captain and Assistant Surgeon. He was elected Superintendent and Resident Physician of the Boston City Hospital in 1872, resigning to become Medical Superintendent of McLean Hospital in 1879. He was appointed Professor of Mental Diseases, Dartmouth College, in 1886, and Clinical Instructor in Mental Diseases, Harvard Medical School, in 1887. The bibliog-

¹ AMERICAN JOURNAL OF INSANITY, January, 1895.

raphy of his contributions to psychiatric science is rich and copious. His services in arousing the alienists of America to better scientific work can never be forgotten. He was one of the first to perceive the need of investigations into the metabolism of mental diseases and to plan for the thorough investigation of all morbid phenomena. The work of Dr. Hoch in clinical psychiatry also received its original impetus from his initiative.

But among all his achievements none ranks higher than his distinguished service as a pioneer in establishing training schools for nurses for the insane. How he has utilized the resources of the new McLean to the full, and placed that institution in the most conspicuous position among kindred institutions in the United States is well known. His mind must have stored none but pleasant memories of his great service to humanity as the chief executive officer of that great hospital for nervous and mental diseases.

The Boston Medical and Surgical Journal for December 17, 1903, contains the following notice:

At a meeting of the Trustees of the Massachusetts General Hospital, held on Friday, December 11, 1903, the following votes relating to the retirement of Dr. Edward Cowles of the McLean Hospital were placed upon their records:

Voted: That the Trustees of the Massachusetts General Hospital, in grateful recognition of the long and successful administration of the McLean Hospital by Dr. Cowles, place this minute upon their records. Dr. Cowles entered the service of the Hospital as Superintendent of the McLean Asylum on December 11, 1879, and is the first of its officers to take advantage of the scheme of retiring allowances adopted by this Board on July 14, 1903. He came to the institution a well-trained and successful hospital administrator. During the twenty-four years of his devoted and efficient service the Asylum has been transformed into a hospital; the attractive and admirably planned establishment at Waverley has taken the place of the unsatisfactory and outworn quarters at Somerville; valuable researches into the nature and treatment of the most terrible of human ailments have been made; and improvements in the care of the insane have been made possible by the knowledge so acquired. At all times he has been the patient and persuasive advisor of the Board and its trusted and efficient agent.

Voted: That a Board of Consulting Physicians for the McLean Hospital is hereby created.

Voted: That Dr. Edward Cowles be appointed a member of the Board of Consulting Physicians for the McLean Hospital.

To the foregoing may be added the news that Dr. Cowles is succeeded by Dr. George T. Tuttle, so long and so favorably known as his loyal assistant physician, and the first position on the assistant staff has been filled by the appointment of Dr. E. Stanley Abbott, until recently assistant superintendent of the Boston City Hospital and formerly assistant physician at McLean Hospital. With such men in charge of the administrative and medical work and such competent pathologists as Drs. Hoch and Folin, McLean Hospital may continue to hold high her head. An item of interest, too, is the information that Dr. Cowles retires on a liberal life pension. So far as we know, this is the first instance of the kind in America, and the specialty is, therefore, laid under obligation to the generous trustees of McLean Hospital for the agreeable precedent thus created.

It remains for us to wish Dr. Cowles health and happiness in the new circumstances of his life. In his retirement he will still be a worker, and, as a member of the new Consulting Board, his counsel will be of great service to his successor. "While I live it is my duty to produce. It is the duty of the world to select from what I produce that which is worth keeping. The world will discharge its duty; I will discharge mine." Thus Victor Hugo; and such, too, let us hope, will be Dr. Cowles' conception of his duty to his fellow-men.

RESIGNATION OF DR. RUNGE.—Very different from the foregoing are the circumstances in which Dr. Edward C. Runge, of the City Asylum of St. Louis, steps out of office. It is the old, old story of politics in asylum management, and politics of a kind calculated to arouse sympathy for the talented outgoing Superintendent, and a sense of shame that a state of affairs so disgraceful can exist in a community so old in civilization as to be actually the center of a great historical celebration.

Dr. Runge, who has been at the head of the institution for nine years charges in the St. Louis Post-Despatch of January 3, that he has been fettered by political influences, compelled to retain dishonest and incompetent employes and subjected to repeated humiliation at the hands of the Health Commissioner, who, we regret to add, is a member of the medical profession. His indictment is tantamount to an assertion that the asylum has been used

to advance the political interests of the Jefferson Club. In support of Dr. Runge's charge one needs but reprint the following tell-tale correspondence:

June 27, 1903.

Dr. E. C. Runge, Superintendent Insane Asylum:

DEAR SIR.—I enclose you a copy of a letter which I received to-day from ———, secretary of the organization committee, which will explain itself. I wish you would let me have a reply, stating what, if anything, can be done in this matter. ———, who is mentioned in ———'s letter, is a personal friend of mine, and I should like to accommodate him.

Yours very truly,

J. H. SIMON, M. D., Health Commissioner.

Inclosed in the above:

Dr. John H. Simon, Health Commissioner:

MY DEAR DOCTOR.—At the Insane Asylum Miss ———, of whom I spoke to you a few nights ago, is employed. She recently sustained some sort of injury to her hand, which necessitates her being placed in a position where her duties were to distribute the laundry. Within the last few days she has been compelled to go back in the laundry room, thus forcing upon her harder work. Her friends from the ——— ward, including our committeeman, ———, have requested me to write you in her behalf, and ask that she be reinstated in the position as distributor in the laundry. I respectfully request, if you can consistently do so, that you make this change, as it seems to be a matter of very great interest for the committeeman of the ——— ward.

Very truly your friend,

At this distance from the scene of the disreputable business to which these letters refer, the JOURNAL does not presume upon judicial utterance on the facts as luridly set forth in the local press. Let us concede that there may be another side, that the Health Commissioner may have his defenders. But nothing can excuse or even extenuate such interference as this with the superintendent of a public institution in matters that are, or at least should be, wholly within his jurisdiction. And the letters by no means tell the worst of the sickening tale of "grafting." Yet the sadness of the situation is not wholly unrelieved by a humorous side, for we read that when the Superintendent asked for an assistant clerk and typewriter, the Health Commissioner sent him a plumber's apprentice to fill the position. Our sympathies go out in abundant measure to Dr. Runge. We congratulate him on having washed his hands of a municipal office in

which authority may be flagrantly set at naught at the behest of self-seeking and time-serving politicians. Meanwhile, one learns with satisfaction that the grand jury is investigating the "grafts" of St. Louis with special reference to the Insane Asylum. The JOURNAL congratulates Dr. Runge on his manful fight for a clean administration against heavy odds, and trusts that, with health and strength long spared and spirit unbroken by the stupendous task in hand, he and his co-laborers in the cause of civic righteousness may bring gradual light out of Cimmerian darkness.

WOMEN NURSES FOR MEN PATIENTS.—There was a spirited debate last summer at the annual meeting of the British Medico-Psychological Association after the reading of Dr. A. R. Turnbull's paper on "Female Nursing of Male Patients." This vexed question is agitating our British brethren greatly. Considerations of gallantry are not usually permitted to stand in the way of Englishmen, and still less of Scotchmen, when vital problems relating to sex are under discussion. So it was in London on the occasion in question.

Dr. Turnbull's treatment of the subject, while temperate, discovered enthusiasm and all but complete conversion to the Mee-renberg idea. A full analysis of the argument would carry us too far. Told in few words, however, the testimony of Fife Asylum is that all the difficulties looked for vanished when put to the test of practice; that the care of the patients has greatly improved; that the men are appreciative of the changed conditions; that the nurses take readily to the work; that the feeling that there is real nursing to be done in asylum duty is accentuated; that the number of male patients kept away from the sick room because women are in charge is remarkably small—limited, in practice, to such as are too restless and noisy for association with other patients, sick or otherwise. According to Dr. Turnbull, there are two classes of beneficiaries under the new dispensation: (1) those who, on account of bodily ailment, require special sick nursing; (2) those whose insanity is of a chronic form, who are in good bodily health, and who are quiet in conduct and present no special difficulty in management. It should be added, however, that his experience is that "the nurses, in taking charge of male patients, prefer, for

obvious reasons, to do so by themselves, and do not care to undertake it in association with male attendants." He referred to the better tone of conduct among male patients in the presence of women, and concluded, while conceding scope for the aid both of attendants and nurses, with a plea for the adoption of both classes of assistance. In the main the participants in the discussion attested the growing favor in which Dr. Turnbull's views are held by British alienists. Much was said of the undesirableness of having a mixed staff of male and female nurses on the male division of the hospital. One witness spoke of the distinct harmfulness of the presence of women among certain classes of men, instancing an application to him by an attendant whose reason for leaving his former employment was because he found the presence of female nurses in the wards was productive in his patients of "the very symptoms he was put there to avoid." The only emphatic spoken dissent from Dr. Turnbull's views came from Dr. Thomson, but from the "hear, hear" which greeted that gentleman's protest one gleans the impression that he was not without many sympathizers in the audience. He may thus have been the spokesman of many inarticulate and less aggressive brethren. "I am astonished," said he, "by what Dr. Turnbull said to-day in advocacy of this, to my mind, preposterous nursing of male insane patients by females." He declared that what the majority of male patients need is attendance, not nursing. Taking up a quotation from a paper by Dr. Robertson, "At the times for the calls of nature and bathing, and so on, they are handed over to men," he lashed himself into this fine frenzy of contempt: "Can anything be more preposterous" (we do not know the sound of Dr. Thomson's voice, but hear in imagination his r's rolling ruggedly in this favorite adjective) "than that in dealing with the insane? It is impossible that any discipline, or management, or fixation of responsibility can be carried out if, when a patient wanted to go to the lavatory, he was handed over to a male attendant, and when not he was looked after by a charming female nurse. No, sir, it is part of this great fad which has come over us to run everything on hospital lines. An asylum is not a hospital and a hospital is not an asylum.* * * I have greater confidence in the nursing capacity of my male attendants than in that of my female nurses." This final observation elicited approval

in some quarters of his audience and it represents an extreme view which would hardly find an echo in this country. The line of safe and proper practice, if one could place it geographically, would probably fall somewhere between Meerenberg in Holland and Thorpe in England, and nearer the former than the latter. In these matters allowance must be made for the personal equation and even for the misogynist who views with alarm the encroachment of women upon men's preserves. The trend of sentiment and practice in America is in line with that of Dr. Turnbull, and finds expression, in some of our hospitals, in the management by female nurses of the two classes of male patients in which he has found them useful. In one of the large State hospitals of New York, Dr. Wise, several years ago, adopted the practice in the nursing of paralytic and other demented. In a Rhode Island institution it has been found distinctly advantageous to have a male infirmary ward in the charge of the wife (a trained nurse) of a male supervisor who is aided in her work, without friction, by male attendants. In one or two instances, however, the impropriety of woman's presence has appeared harmful along the lines mentioned by Dr. Thomson, when the simple remedy of separation has instantly relieved the situation. Given common sense and freedom from prejudice on the part of the official staff and sufficient elasticity in the service, practical difficulties become a negligible quantity. Did not Ruskin apprehend the saliency of this whole situation when he once said, "we are foolish, and without excuse foolish, in speaking of the 'superiority' of one sex to the other, as if they could be compared in similar things"? And in that context it may be recalled, the master declared, in delicious epigram, that woman is fitted "for rule, not for battle." Americans, whether they all like it or not, must at least concede the wide prevalence of this sentiment and will continue to accept woman's dominion in the sick room without such protests as evoked the Englishman's imperative approval, *more suo*, at the London meeting, while, in counter cheer across the ocean our "*Place aux dames*" may answer gallantly the "Hear, hear" of conservative opposition from Great Britain.

Obituary

ELI EDWARD JOSSELYN, M. D.

Dr. Eli E. Josselyn, Assistant Physician at the Pennsylvania Hospital for the Insane, Philadelphia, died suddenly at that institution on Sunday evening September thirteenth last, in the fifty-ninth year of his age.

He was born in Plymouth County, Massachusetts and was educated in the common schools of the State. Early in life he lost his mother and his young boyhood days were spent under the care of his maternal grandmother, a New England woman of the Puritan type who left upon her grandson the imprint of her teaching and example.

He received his medical education at the Medical Department of the University of New York from which institution he was graduated in 1873.

He was for sometime connected with the Hospital for Ruptured and Crippled Children in New York where he did good work under the late Dr. James Knight. Though his subsequent career was mostly spent in a department of medicine very distinct from the field of his early labors he never lost his interest in orthopedic surgery. In 1879 he became connected temporarily with the medical staff of the State Hospital for the Insane at Utica, and so well did he perform his duties that when a vacancy occurred in the staff the following year he was given a permanent appointment, which he retained until December, 1883, when he resigned to enter upon private practice. He subsequently was connected for a short period with the private institution of Dr. Patterson at Batavia, Illinois, and since 1886 first as a substitute and then permanently with the Pennsylvania Hospital for Insane, serving in both the department for men and in that for women, with which department he was connected at the time of his death. Dr. Josselyn was one who attracted and held friends. He was at times somewhat quick and brusque in manner, with strong likes and dis-

likes and even prejudices, but notwithstanding the strength of these he spoke evil of no one. He was a man of character in an usually degree, and of strong individuality, so strong indeed that he seemed at times to those who did not have the favor and pleasure of his intimate acquaintance, to be in some respects peculiar and warped. With a more liberal education, the lack of which he always deplored, he would have ranked as a man of brilliant mind.

He was a lover of nature; and flowers and trees and growing things were his special delight. In some degree, repressed no doubt in a measure by his puritanical training and early environment, he had the instincts of a poet and if his tendencies had turned towards descriptive writing, he might have made his mark as a writer. He was a keen observer of men, and the writer, in common with a few others of his really intimate friends, well remembers the interest with which he has, time after time, listened to his graphic description of adventures and his shrewd and often epigrammatic comments upon men and things. He was a man of generous and charitable instincts and in a quiet way used his means for the good of others. It is not known to what extent he contributed to charity, but one or two instances are known to the writer, in which he met all or nearly all the expenses of a college education for young men, who otherwise would have been unable to attend college.

He was a man of strong religious faith, and of strict honesty and uprightness of life and the inscription found among his papers after his death, "I know that my Redeemer liveth," may be worthily placed on his tombstone.

This inscription had been written by Dr. Josselyn early on the morning of the day of his death with the request that it be placed on his tombstone. He had suffered, it was learned after his death, from previous attacks of angina pectoris, concerning which, however, he had said nothing to his medical friends. An attack of this character was doubtless the cause of his sudden death.

To the writer, as to all of his old associates at the Utica and Pennsylvania Hospitals, where he was held in fond esteem, the news of his death came bringing with it a sense of profound and irreparable loss; and he desires with them to contribute to his memory the tribute of a sincere affection.

E. N. B.

Abstracts and Extracts

Troubles Mentaux à forme melancholique avec anxiété dus à l'existence ignorée de polypes muqueux des fosses nasales et genesis par l'ablation de ces tumeurs. Par DR. ROYET. Le Progrès Médical, t. XVIII, p. 97, Août 15, 1903.

After reviewing the literature and reporting his case in detail, the author concludes as follows:

In this presentation the points of most interest are: First. Without regard to the intensity it is the form of mental trouble which presents all the psychic symptoms one meets with either singly or variously associated in the course of affections of the naso-pharyngeal cavities; viz.: mental distractibility, difficulty in fixing the attention and in making mental effort, flight of ideas, a state of light reverie, a continued feeling of anxiety, restlessness, exhaustion, and depression; disappearance of the mental symptoms following treatment of the nose.

Second. Production of these symptoms by polypi which do not interfere with the respiration. A fact which possibly reduces the cause to reflex action, or vasomotor or lymphatic disturbance of the nervous centers.

Third. The paradoxical intensity of the nervous phenomena in comparison with the insignificance of the exciting cause. It is well just here to mention the idea of individual hereditary or acquired predisposition, in relation to which theory the part played by reflexes of nasal origin in nervous disorders has been well established by Ruault. However, so much importance has been assigned to the idea of predisposition as to overshadow all the other causes. There is a natural tendency to neglect the treatment, probably because treatment of conditions which are looked upon as depending upon predisposition or hysteria seems illogical. On the contrary, these are just the cases where treatment should be most thorough, in order to eliminate the slight causes that are responsible for such serious results. Moreover, from the point of view of nervous pathology predisposition is of no more significance here than in any other branch of medicine. It is no more surprising to see a nervous person have a convulsion from fear of toothache than for one who is subject to diarrhœa to have colic from drinking a glass of fresh water.

Fourth. Lastly, the tendency of the lesion makes it frequently especially important in practice.

H. J. S.

The Treatment of Degenerative Diseases of the Nervous System by Massive Doses of Strychnia, with Special Reference to Tabes Dorsalis, Progressive Muscular Atrophy, Optic Nerve Atrophy and Pseudo-Muscular Hypertrophy. By GRAEME M. HAMMOND. Boston Med. and Surg. Journal, Vol. CXLIX, p. 223, August 27, 1903.

The author has treated four cases of tabes dorsalis, three cases of progressive muscular atrophy; three cases of optic nerve atrophy, and one case of pseudo-muscular hypertrophy, by doses of strychnia beginning with 1-50 to 1-40 of a grain three times daily and gradually increasing up to 1-4 to 2-3 of a grain three times daily. While no patient was restored to a normal condition, in every case there was more or less improvement and the degenerative process seemed to be arrested.

W. R. D.

Paralysis Agitans, Complicated with Delusional Mania, with Report of Case. By JOHN PUNTON. Kansas City Medical Index-Lancet, Vol. XXIV, p. 303, September, 1903.

The author briefly reviews part of the literature of paralysis agitans. The fact that mental symptoms as so seldom found as a complication is the reason for reporting the case, which will not admit of a brief abstract, and the reader is, therefore, referred to the original.

W. R. D.

The Problem of Insanity in Ireland. By W. R. McDERMOTT. Edinburgh Medical Journal, Vol. XIV, p. 223, September, 1903.

The author takes up the line of argument advanced by Dr. McPherson in a paper published in the May number of the same journal and believes that from his experience in the actual field of observation he can develop and explain the views of Dr. McPherson. Briefly, the increase of insanity in the agrarian districts of Ireland is said to be the result of diminished reproduction, due to marriages late in life, and to celibacy, both of these being accounted for by the more strenuous struggle for existence necessitated by the unfavorable conditions encountered by the poor. This is shown in the agrarian districts of Europe as well as in Ireland. The paper is interesting.

W. R. D.

A Case of Automatic Wandering Lasting Five Days. By W. S. COLMAN. The Lancet, Vol. CLXV, p. 593, August 29, 1903.

The patient had several attacks of automatic wandering. The first, occurring three years ago, lasted thirty hours; the second, prolonged attack occurred in January of the present year, and lasted five and a half days. Between these two the patient had had a number which lasted from a few minutes to half an hour. It is of interest that the patient's brother and paternal uncle were epileptics, and that another brother had died in infancy of "convulsions." The author cites several cases described by other writers.

W. R. D.

Early Symptoms of Dementia Præcox. By A. R. DIEFENDORF, M. D.
Medical Record, September 19, 1903.

This paper is composed largely of abstracts of cases in which the author gives the following symptoms which he thinks will be of use in differentiating dementia præcox from neurasthenic and hysteroid cases.

While it must be admitted that sometimes the distinction between dementia præcox and neurasthenia at the onset is not easy, yet most of the cases of the former disease can be detected. In the latter disease there is always some adequate cause for the asthenic state of the nervous system. This is rarely present in dementia præcox. In the emotional attitude of neurasthenia there is usually some despondency and also apprehension about the outcome of the disease but this may vary from day to day, some days the patients being very hopeful and buoyant and as a rule they feel better as the day wears on; at their best in the evening. In dementia præcox when despondency is present it is constant and is of increasing indifference and apathy. The hypochondriacal ideas in neurasthenia are extensive, usually involving several parts or organs of the body while in dementia præcox the ideas are less extensive and usually center about one or two organs, especially the sexual organs. Hypochondriasis in neurasthenia tends to increase except as disease abates, while in dementia præcox it tends to diminish as the disease progresses. Neurasthenics are apt to complain of losing mental power and fear of losing their mind. In dementia præcox evidences of deterioration exist unnoticed by the patient. Impulsive acts are often present in dementia præcox but are rare in neurasthenia.

In the hysteroid cases there is always a hysterical basis which is manifested by various hysterical symptoms of phenomena. In the emotional attitude in hysteria the patients are entirely under control of their feelings and vacillate from one mood to another always craving sympathy, but in dementia præcox the state is one of indifference and apathy and no reaction to environment. Hysterical paroxysms are characterized by both motor and sensory symptoms. In dementia præcox if they occur they are motor and of an epileptical character. In hysteria genuine hallucinations and delusions are never present, what are thought to be, will be found upon close inquiry, to be the result of a lively imagination. The store of ideas in hysteria is rarely impoverished though voluntary conversation usually centers about the patient's ills, but in dementia præcox there is lack of continuity of thought, and a progressive impoverishment of ideas regularly accompanies the course of disease. Finally, hysterical patients are very egotistical.

G. E. C.

Book Reviews

Ueber die Dementia Præcox, von Dr. Alexander Bernstein. Allgemeine Zeitschrift für Psychiatrie, July, 1903.

The author's motive in writing this article is that a more convenient name may be given to the disease now known as *Dementia Præcox*. He points out that a dementia præcox has been described by *Christian*, by *Tschisch*, by *Anfimoff* and by *Sirbsky*, and that the dementia præcox of these authors is not identical with that described by *Kraepelin*. Moreover, the predicate *præcox* is misleading in that it might be taken as an indication of the age at which dementia occurs.

The term *catatonia*, which has been used by many, also leads to misunderstanding, in that *Kahlbaum*, *Schüle*, *Tschisch*, *Korsakoff*, *Sirbsky* and *Kraepelin* (1896) have each described catatonias differing in some respects one from the other. The term, to be desirable, must before everything else indicate the unity of the specific motor phenomena of dementia præcox. These motor characteristics must, moreover, be given a very circumscribed clinical meaning if they are to be used as valuable terms of qualification; otherwise the use of even such words as *atony*, *cataplexy*, *negativism*, *mutism*, *stereotypy* and *mannerism* may often carry us to an arbitrary diagnosis. Atony and cataplexy, especially, are the least pathognomonic of dementia præcox. Catatonic stupor and catatonic muscular elasticity are especially distinguished from atony and *flexibilitas cerea* which are observed in circular stupor (*melancholia attonita*, *amentia stuporosa* and similar forms of different authors).

In cataplexy the musculature is in a condition of indifferent balance. *Flexibilitas cerea* exhibits itself less through contraction of muscles essential in the movements than through light and elastic extension of the opposing muscles. It is entirely otherwise in catatonia in which the musculature is in a condition which we term hypertonic and where both movements meet with resistance, the external agent having not only to act as the moving muscles but also to overcome the resistance of those that oppose. The difference in the muscular condition in circular and in catatonic stupor is exhibited also in the musculature of the countenance where it manifests itself through mimical distinctions. In circular stupor there is the stamp of depression or of ecstasy while in catatonic stupor the countenance is an inscrutable, tense, empty mask. In the catatonic stupor, the tonic relations of the entire mimical musculature do not correspond with the usual emotional physiognomic grouping of innervation in the

countenance, but, on the other hand, the single muscle groups seem excessively tense, now in rigid tension, now in an intricate grimacing which consists of gymnastic contraction, and is not mimical. This gymnastic stamp is also a characteristic of all the movements pathognomonic of dementia præcox. The movements are independent of the immotional condition of the patient. The catatonic pose is not dramatic as is that of manic-depressive insanity but is, rather, a *Manequin-Pose*, a *Clown-Stellung*. The stereotyped movements also appear as pure gymnastic psycho-motor phenomena not discharged in the normal psychologic-emotional manner; likewise in speech only those verbal repetitions can be designated stereotypy which exhibit no emotional, but pure motor, foundation which we recognize in verbigeration. Mutism forms the clinical opposite to verbigeration and is an accompaniment of catatonic stupor, standing in the same relation to that condition which verbigeration bears to catatonic grimacing and body movements. But as only the tense and not the atonic immobility belongs to catatonic stupor, so that silence only may be designated mutism which is characterized not by absence and retardation of thought but more by active speech inhibiting impulses. This activity carries the clinical designation of negativism. Negativism is not simple resistance against external influences which are opposed to the subject from contingent reasons, but a generalized tendency toward protest as such; it is resistance against everything. Negativism does not distinguish between the agreeable and the unpleasant, between the useful and the harmful; the patient resists both with the same obstinacy, entirely independent of his states of consciousness or their content. Somewhat more rarely than the negative subordination there comes, in dementia præcox, the direct, namely command automatism or suggestibility. It forms only a further degree of the same disturbance of will. It occurs entirely independently of the mental condition of the patient. The distinction comes only in the direction of the innervation which is at one time antagonistic, at another time accordant. In the last case a limb may assume a condition simulating *flexibilitas cerea*.

As in negativism, so in common automatism there is no appreciation of motive or of result but merely of the mechanical nature of the requirement. In a high-grade suggestibility the patient imitates the movements of his neighbors or repeats words which he hears (echokinesia, echopraxia). It is diagnostic of all catatonic characteristics that they appear with great suddenness, entirely independent of the alteration in general condition, replace each other, and disappear. Their occurrence and disappearance in no way coincide with changes of mood, formation of delusions or modification of consciousness. The emotion thus loses its influential position as originator of every active movement and every active thought; that releasing and directing force flows, apparently, from other sources which in healthy individuals are repressed in normal manner by means of the active personality. The catatonic behavior is not conditioned by the totality of emotional forces which determines the personality but exists independently of it, parallel to, even in spite of it, and will evidently be released by more general and more powerful factors than the weakened individual-

ity of the patient. This psychological foundation may be most easily recognized in the simplest motor symptoms of dementia præcox, especially in such expressions as negativism and suggestibility, the static and dynamic inertia; but we recognize it just as well in the impulsive behavior, the posing, the gymnastic movements of the catatonic; it exhibits itself, also, in the absence of active attention, in the desultoriness of thought; in empty reasoning, in sterile productiveness. We know practically nothing as to what pathological substratum determines this psychological basis; it is only known that the disease possesses a series of somatic symptoms. Certain secretory and vasomotor disturbances are observed (increase of sweat and saliva, dermographia, cyanosis), general disturbance of nutrition (fluctuations in temperature and weight) and finally muscular disturbances. The last show themselves, in addition to the psychically conditioned awkwardness and clumsiness of movements, through retardation in the conduction of impulses and in pseudohypertrophy. The former expresses itself in such a way that the muscles of the catatonic react on mechanical irritation in the so-called muscle-wave (Muskelwulst).

Muscle tension in the catatonic must be distinguished from the hypertonicity dependent upon pyramidal disease; in catatonia the tension is conditioned on psycho-motor disturbance and exhibits the psychogenous rather than the spastic phenomenon. If we designate it with the name catatonic tension, the designation expresses neither the psychological nor the clinical characteristics of the phenomenon; perhaps the term paratonic would have been more appropriate, especially, since this term would have permitted the comprehension of the characteristic peculiarities of the diseases as psychoreflex or as psychomotor. This designation might, perhaps, also serve as an appellation of the whole disease. Analogous to dementia paralytica progressiva, one could speak, instead of dementia præcox, of a dementia paratonica progressiva. [In a foot-note the author suggests that the dementia præcox might be designated *Morbus Kraepelinii*, since it is impossible to speak of this disease without thinking of the name of Kraepelin, its proper author.]

The study of dementia præcox is as yet in a period of hopeful synthesis: The founder of this study himself no longer holds firmly to the necessity of dividing sharply from each other the hebephrenic catatonic and paranoid forms. These types will only rarely be observed in a pure and isolated form; mixed or even changing types are more frequent. This schematic form division seems to be a certain concession to the substitution of the symptomologic conception of clinical disease forms. Such a concession can be justified neither in principal, theory or practice. The clinical study has still before it many useful and fruitful problems. We stand before pressing and actual questions concerning differences in the varieties of the course; our next task is the establishment of individual diagnosis and the discovery of some clinical token indicative of individual prognosis, the onset, the extent and the duration of remission, on the one hand, the progression and the extent of terminal dementia on the other; these and similar questions seem to stand in the way of clinical study.

W. McD.

Zur Casuistik der periodisch verlaufenden Geistesstörungen von Dr. Georg Eisath, Hilfarzt der Landes-Irrenanstalt Hall-Tirol. Allgemeine Zeitschrift für Psychiatrie. Sechzigster Band Drittes Heft. (May 20, 1903.)

The subject of which this article treats is of such importance among the many mooted questions of diagnosis and classification in late psychiatric literature, and the article of such value in the discussion, that an English abstract of some length is warranted.

The author says that in regard to periodic mental disturbances there are two opposed teachings, that of Kirn and Hitzig, on the one hand, and that of Kraepelin on the other. The former allot to the periodic only those mental disturbances *which recur regularly and periodically in their characteristic manifestations*, wherewith a number of periodic psychoses are recognized, as circular insanity, periodic mania, melancholia, amentia, paranoia, etc. Kraepelin, on the contrary, says that it is impossible to define any exact period within which the periodic diseases arise and subside. The recurrences of the attack, he says, are subject to great fluctuations and irregularities. There are, for instance, periodic psychoses, which recur at entirely regular intervals for a long time, then suddenly take an entirely irregular course. The same author is of the opinion that if a regular, periodic, mental disturbance *sui generis* may be spoken of at all, it can be only of manic-depressive insanity, although there are numerous other mental disturbances, as dementia præcox, epilepsy, hysteria, and intoxication psychoses which run fluctuating periodic courses. Kraepelin declares that, as regards the symptomatology of individual periodic diseases, the pathological manifestations can interchange in a variegated jumble, that a uniformity of attacks cannot be predicated, and that it is impossible to point out where a distinctive uniformity of attacks begins and where the features end in non-conformity. These two points of view are essentially opposed to each other, and the aim for the future should be that the patients be observed throughout a long period of time, that the mental affections be sufficiently delineated as to phases, course, and outcome, and that definite practical data be identified which tend toward clarification and harmonization of the contradictions and contribute to the differentiation of definite psychiatric clinical types.

To give prominence to a like contradiction it may be mentioned that Kraepelin with his school advocates the opinion that there are no periodic melancholias and manias. Every periodic melancholia, as well as every periodic mania, exhibits in longer and more thorough observation, fluctuations of the mood toward the opposite direction, and thus it is to be supposed that the indicated morbid phenomena are but phases of the great group of manic-depressive insanity. Hitzig, Pilcz, Sommer, Ziehen and their followers, on the other hand, recognize periodic melancholia as well as periodic mania as independent but rare psychiatric clinical forms. In bringing these points somewhere nearer to positive adjustment the two reports of cases immediately following should contribute somewhat as clinical data.

Case I (described at length in the original). A woman 24 years of age, with no hereditary taint known, coincidentally with her marriage, became greatly depressed. After four months' illness the symptoms disappeared. 12 years later at the death of her mother, there came again an intense emotional depression with suicidal impulses and delusions of self-denouncement. In a few days she was again completely normal and from 1894 to 1896 the disease ran a course with short periods of illness and health. Within 21 years, in all, 13 attacks are indicated, all depressive in character and at no time was manic excitement noted. The intellectual powers of the woman are undiminished.

Here was evidently a periodic depression of the mood, with which, however, as is gathered, the woman occasionally became better humored and laughed. From the history of the illness and also from the woman herself it was ascertained that the good humor never extended beyond the limit of physiological, normal pleasurable feeling. Hence a pathological fluctuation of the emotion, in the sense of manic excitement is to be excluded, and the case so far as observation of twenty-one years indicates, betokens periodic melancholia.

Such cases, as Pilcz admits, belong to the rarely observed pathological forms. When it is considered that among all the patients admitted to our institution since 1870 only this one case is found which ran a course of pure periodic depressive conditions, one is more certainly warranted in admitting the rarity of the appearance of these cases.

When Kemmler declares concerning the depressive moods that these, when they appear in youth, have a tendency to reappear, are closely related to the manic excited conditions, and are fundamentally distinguished from the depression forms of the involutional age, for which the term melancholia should be exclusively reserved, then our observation supports the first clause of his assertion. It does not, however, establish that our case is closely allied with the manic conditions of excitement. I am not prepared to affirm whether or not my case is fundamentally different from the melancholia appearing in the involutional period.

The same contradiction which exists among psychiatrists regarding periodic melancholia appears also concerning periodic mania. The same authors are arrayed on opposite sides, one part claiming that periodic mania is to be recognized as a self-existent clinical form, the school of Kraepelin, on the contrary, taking the stand that there is no periodic mania as an independent form, this latter existing only as a phase of manic-depressive insanity.

Case II. (Reported at length in text.) No hereditary taint. The mental disturbance appeared for the first time in the involutional period, the woman being 46 years old. Conditions of manic excitement of unequal duration occurred with quiet intervals of from a few days to two months' duration. The attacks were repeated, according to the statement of patient and the observations in the hospital, always in the same mode. In all there were 20 outbreaks. Emotional depression was not exhibited and was denied by the patient and by the attendants. The intellect remained

unimpaired. In the 20th attack the patient died after a 16 years' duration of the psychosis. The disease became evident first in the climacterium, probably incited through the preceding physical involution of the change of life and perhaps also through abuse of spirituous beverages. The total lack of intellectual decline permits the exclusion of all diseases which proceed to mental weakness. One could be disposed to view the case as an alcoholic psychosis. In the first attacks it was fitting to consider this last possibility, but as the patient since 1896, except for a 26 days' sojourn outside, has otherwise always lived with us completely withdrawn from spirituous drinks and as the characteristic attacks nevertheless recurred, the illness cannot be considered as an alcoholic psychosis. From these considerations, as from the symptom-complex, there remains no doubt that we have here periodically appearing manic excitement conditions. The beginning of the individual attacks was never associated with a depression stadium. The termination of the attacks was followed by just as little of a pathological depression. In the hospital the attacks are all recorded as outbreaks of *mania gravis*.

Pilcz says that the cases of periodic mania with high grade frenzy, with flight of ideas and hallucinations, frequently come to an outbreak for the first time in later years of life. Our case, except for the hallucinations, which we believe to have been due to the inebriety, agrees with this entirely.

It must be especially emphasized in our case, however, that in agreement with Krafft-Ebing, Mendel and partially also with Pilcz, that the attack was never preceded by a depressed mood and after it had passed, without melancholic interval, the patient exhibited her usual intermediary demeanor. These points are of special value in deciding the question whether it is proper or not to recognize periodic mania as an independent clinical form or whether these cases, in agreement with the Heidelberg school, should be classed with manic-depressive insanity.

The following case which belongs to manic-depressive insanity demonstrates that after the psychosis has lasted for decades the intelligence may remain unimpaired.

Case III. Family history negative. Became ill for the first time at 17 years of age. Then came at least 12 severe attacks at entirely irregular intervals. During these there were often long, circular disturbances of the emotion. Notwithstanding the severe individual attacks and the now 40 years' duration of the illness, the mental powers in no way show impairment.

Affections of still longer duration and with undiminished intellectual powers are reported by Foville with a duration of 44 years and by Pilcz with a duration of 48 years.

The following cases do not fall under periodical mental affections in the sense of the Pilcz classification; both cases belong to dementia præcox with a partially periodic course.

Case IV. The illness began at the 44th year with six periodic depressive stadia, comprising a manic phase with senseless, fantastic delusions of grandeur but with recognition of the surrounding persons. During this attack the damage to the intellectual power took place. The interest in

the illness which has now lasted for over 13 years lies in the fact that the affection appears with delusions which in every way remind one of the variegated delusions of grandeur of the paretic: the man plays all instruments, is the best musician, etc.: Archduke John brings him fancy milk: he will build a church-tower and order for it a clock costing 14,000,000 gulden. These delusions do not rest upon sensory deceptions, but more likely upon pathologically heightened mood.

Many psychiatrists claim that such delusions occur chiefly in the exaltation stadia of classical paresis and yet with our patient there were never to be observed any signs of progressive paralysis. This case offers support to the declaration of Kraepelin that the content of delusions does not permit, any more than does their occurrence generally, any reliable conclusions as to the variety of a given pathological process. Senseless fantastic delusions are observed in manic-depressive insanity, in dementia paralytica, præcox and senilis. Where then does the above mentioned case belong? From the clinical history, in the face of the fact that the illness first broke out at the 44th year, just suspicion must be fixed upon dementia præcox. Through personal observation, weakness of judgment and memory, conspicuous dullness of feeling with fragments of stereotyped movements were identified and the diagnosis was, therefore, bestowed upon the last mentioned disease.

The following case is a rare variety of dementia præcox. The disease ran in almost typical periodic attacks with quiet intervals of shorter or longer duration resulting gradually and slowly in a weakened mental condition.

Case V. No direct hereditary taint. Normal development. The illness began at the age of 20 with fainting spells. In all there were 11 attacks varying in duration from a day to nearly a year, with conditions part depressive, part expansive, part stuporous, part confused, all associated with stereotypy. The quiet intervals varied from 1 month to 11½ years in duration. The entire duration was 23 years. Outcome; inability to support herself, weak-mindedness of a lighter grade with childish, foolish, lackadaisical manner.

This case was carried on the records as a periodic mental disturbance. The individual attacks were pronounced mania and melancholia. It was therefore an easy step to consider the case as manic-depressive insanity. The close analysis of the symptoms, however, and especially the outcome in a state of childish mental weakness justifies the inclusion of the case under dementia præcox.

Fainting spells and epileptoid convulsive attacks have not been usual in our cases as in the experience of Kraepelin. Confusional periods are frequently observed in the course of the illness (dementia præcox). Meynert and Sommer mention the occurrence of confusional states, excepting in febrile and toxic psychoses, only in epilepsy and traumatic mental disturbances. Krafft-Ebing, Ziehen, Kraepelin and others take the view that these conditions occur in other mental disturbances. Kraepelin observed such conditions often in dementia præcox.

Our patient in a condition of disturbed consciousness behaved in a manner to remind one of the "*automatisme ambulaire*" of Charcot, and of the epileptic wandering impulse (*poriomanie*). This impulsion to wandering was frequently evident in our case.

The chief interest in the last case lies in the peculiar periodic course which can now be traced throughout 23 years. In accessible literature I have found no similar case. Christian describes a case of dementia *præcox* with a duration of over 40 years but dementia had already appeared early, and a periodic course is not mentioned. Daraszkievicz observed a case which had a duration of about 14 years in the beginning of which the attacks were more periodic followed by a phase with longer duration of active symptoms during which dementia occurred.

In conclusion, of the five cases here reported, the last two belong to dementia *præcox* and cannot participate in the problem as periodic psychoses, and according to Hitzig and Pilcz, of the remaining three, only Case II is to be construed as an instance of periodic mental disturbance. Only in the one case have we to do with a form "the individual attacks of which, without known external cause, repeat themselves regularly and periodically in their characteristic manifestations." In Cases I and II, on the contrary, the individual attacks do not appear in regular repetition, but in unequal intervals of from a few days to 11 years in duration. And yet it must be seen that the individual attacks of Case I resemble each other in their manifestations.

These few cases go to show that there are disturbances which correspond with the view advocated by Hitzig and Pilcz, and yet it is just as easily seen that there are varying transitions from the periodic to the recurring forms. These facts assure us of the justice and correctness of the teaching of Kraepelin, according to whom it is not permissible to recognize periodicity as the signpost for the differentiation of particular psychiatric clinical forms.

Another question is whether manic-depressive insanity is to be comprehended in every respect in accordance with the interpretation of Kraepelin. Cases I and II do not stand in complete harmony with the teachings of the Heidelberg school. In Case I during the whole 21 years only depressive conditions, and in Case II during 16 years, only manic conditions were noted.

Remarks. Such a complete description of allied cases, as is here given, is of most signal value to the psychiatry of to-day, since it is largely by careful consideration of individual symptoms and their proper relation to course and outcome that we can hope to bring an orderly grouping out of the heretofore chaotic arrangement of nosological systems. Beyond the mere presentation of the cases, the author's deductions are for the most part just and warrantable, but in one important point, however, it would seem that his position is not unassailable. He says that Cases I and II are out of accord with Kraepelin's manic-depressive insanity because during the whole course of 21 years of the first case only depressive, and in Case II, in 16 years' duration, only manic conditions were observed. It is possible that the reviewer has misconceived the position of Kraepelin in

believing that his claim is, not that there *never* occur cases with manic excitement or depression alone without the reverse condition, but that even though years may pass in continuous or interrupted exhibition of one phase, the other phase *usually* (not *necessarily*) comes to view: that as phases, neither the one nor the other condition is essential to the diagnosis, while both express central pathological nervous conditions closely allied in nature and easily giving place one to the other. Just as in tuberculosis of the lungs, the disease may express itself in a constant, feverish, tense activity or in continuous, languid, flaccid quietude or again in alternate and contradictory exhibitions of the two opposed varieties of conduct, so in manic-depressive insanity the one or the other phase might continue indefinitely or until death, though some sort of alternation in conduct is the rule. If depression can continue for a year, as it often does, or for five years, or for ten, as it has been known to do, and then give place to manic excitement, it certainly necessitates no change in our conception of the disease if one phase continues for 16 years, or, as in the other rare case reported, for 23 years.

W. McD.

Transactions of the Medical Association of the State of Alabama (The State Board of Health) for 1903. (Montgomery, Alabama: The Brown Printing Co., 1903.)

The members of the State Medical Society of Alabama are to be congratulated on the papers presented for 1903, which are published in this volume of transactions. Detailed notice of the various papers is impossible, but we must comment on their practical character. The man who presents a paper but has nothing to say must either be kept off the program in Alabama or—what is the next best thing—his production is not published.

There is a report of an excellent address by Dr. Stiles on Uncinariasis. The advantage of having him speak on this subject in a locality where the disease exists cannot be overestimated. The interest taken by the profession of the South in this disease is stimulating to see. The paper by Dr. Bondurant in this volume is an example. The careful investigation necessary for the recognition of this condition will be of great benefit to the profession. Having learned to look into one condition carefully, a man is likely to carry exact methods into other work.

The American Illustrated Medical Dictionary and The American Pocket Medical Dictionary. By W. A. N. DORLAND, M. D. (W. B. Saunders & Co., 1903.)

On one occasion when it was suggested to Johnson by Boswell that he had not known how much he was undertaking when he began his dictionary, Johnson replied, "Yes, sir. I knew very well what I was undertaking—and very well how to do it—and have done it very well." The same judgment can be passed on this work, for Dr. Dorland has done his dictionary making well. To sit down deliberately to look into a dictionary seems to promise little of interest, but let any one try it and he is likely to be pleasantly surprised. Picking out a word at random the first chosen

was "sign." It is surprising to find that there are nearly two hundred signs in medicine associated with the names of observers. To discover how few of these one knows may be surprising, but it should not lead to the effort to know all. Under "stains and staining methods" is an amount of information which could be obtained elsewhere with difficulty. There seemed ample information under these two heads. The third selected was "pill" with the intention of looking up the old "Guy's pill," of which however, there was no mention. In an American dictionary published in 1903 there should be some mention of the American variety of *Uncinaria*, but none is to be found. These, however, are small points and the volume is to be strongly recommended. Every student should have a good dictionary and use it. The one under review is specially convenient and easily used. The smaller pocket one has a place of its own, but for the majority of us the larger volume is to be recommended.

Scheme for the Differential Testing of Nerves and Muscles. By J. MONTGOMERY MOSHER, M. D. (Albany: Fort Orange Press. 1903.)

Dr. Mosher is to be congratulated on having produced a most useful book and one which both the beginner in the use of electricity and the more seasoned operator will find of value. The book is small, consisting of 58 pages in all, with six plates. The technique of electro-diagnosis is first described in a simple manner, then the subject of variation in electric excitability, including the reaction of degeneration, is discussed briefly yet most clearly. These occupy the first 40 pages, the remainder of the book is occupied with a list of the different motor-points for the nerves and muscles. The action of the nerve is given, and the motor point is then stated clearly and succinctly. The admirable plates supplement the text and it is this last part of the work which the more experienced operator will find of great convenience for refreshing his memory. Brevity is the keynote of the book, but clearness is not sacrificed.

Bericht des niederösterreich. Landesausschusses über seine Amtswirksamkeit vom 1. Juli, 1901, bis 30. Juni, 1902. Vi. Gesundheitswesen, Landeswohltatigkeitsangelegenheiten, Militäreinquartierung und Vorspann. (Referent: Leopold Steiner. Wien, 1902, aus der kaiserlich-königlichen Hof- und Staatsdruckerei.)

This report covers 550 pages, and is divided into four parts. The first deals with statistics of general sanitation such as vaccination, tuberculosis, chronic alcoholism, etc. The second part deals with hospitals for the insane, and feeble-minded children, and other charitable institutions. Part three deals with affairs of the blind, trade, schools, etc. Part four has to do with military affairs, barracks, etc. The second part is the one in which we, as alienists, are most interested. We find that there are five institutions for the insane situated in Vienna, Langeulois, Ebbs, Klosterburg, and Kierling-Gugging. The statistics of each one of these hospitals are given separately and in considerable detail. These are preceded by a general summary of the principal statistics of all of the hospitals. The

total number of patients, admitted to these hospitals during the year 1901, was 2047, the total number under care was 5054, and the number remaining under care at the end of 1901 was 3094. Of these last 991 (32.03 per cent) were diagnosed paranoia (primäre verrücktheit). Of those admitted during the year 422 (20.61 per cent) were cases of paresis (paralytische geistesstörung). These being the largest numbers in these two groups. The figures are discussed at some length and the remainder of the report is similar to those with which we are familiar in this country. W. R. D.

Intracranial Tumors Among the Insane. A Study of Twenty-nine Intracranial Tumors Found in Sixteen Hundred and Forty-two Autopsies in Cases of Mental Disease. By I. W. BLACKBURN, M. D., Pathologist to the Government Hospital for the Insane, Washington, D. C.

The scientific investigator who performs his work in a careful, systematic and intelligent way is of course deserving of praise. He is not wastefully expending energy; he is merely transforming it. As long as he keeps to himself the results of his labor, however, the transformed energy remains merely potential and there is always danger that it may reach a state of quietude where it may remain of value only to him who has rendered it potential. When, however, the acquired power—for "knowledge is power"—has been distributed broadcast, for the use of him who runs, the labor has reached its fruition and is ready for the harvest. The volume bearing the above title is one of these ripened fruits. The fruit is not only fair to look upon but is moreover sound to the heart.

The book is small, and neatly bound. It is illustrated by thirty plates and sixty-five drawings, all of an excellence seldom met with. The illustrations are accompanied by ninety-four pages of text in which the plates are described in detail and a brief résumé given of the clinical history and symptoms of the case. The whole subject has been considered mainly from the standpoint of morbid anatomy and pathological histology. Complete histories could not be given, as the patients were all those of the Government Insane Hospital and many were already far advanced in dementia at the time of admission.

Of the 28 true tumors 17 were spindle-celled endothelial sarcomata, usually of the dura mater. The gliomata have been represented by a number of drawings from typical fields. The ordinary sarcomata are represented by a single tumor. The specific granulomata are represented by a case of multiple tubercular tumors of the brain and extensive deposits in the lungs, vertebræ and elsewhere. Tubercular disease of the brain and meninges was found to be infrequent as most of the autopsies were upon adults. It is remarkable that in over 1700 autopsies no syphilitic growth of the brain was found which could be dignified by the name of tumor or gumma. Three growths were found within the pituitary fossa; two of which involved the pituitary body and one occupied the fossa and greatly enlarged it, but did not affect the gland. In none of these cases were there any signs of acromegaly.

Dr. Blackburn deserves credit for fine work finely executed and his

book, though it does not cover a large field in neurology and psychiatry, will be of interest to all specialists in these branches as well as to surgeons and pathologists and will be of great value as a book of reference for any who have need of information on brain tumors. Wm. McD.

Nervous and Mental Diseases. By ARCHIBALD CHURCH, M. D., Professor of Nervous and Mental Diseases, Northwestern University Medical School, Chicago, and FREDERICK PETERSON, M. D., Chief of Clinic Department of Nervous Diseases, College of Physicians and Surgeons, New York. Fourth Ed., thoroughly revised and enlarged. (Philadelphia, New York, London: W. B. Saunders & Co., 1903.)

The book appears in its fourth edition. It has been reviewed in the past and is so well known as a standard text-book that it needs no general critical survey; only new features therefore will receive attention.

The book as a whole is a trifle more bulky than the previous edition, though the general external appearance has been preserved and there is close adherence to the former order, structure and method of treatment. In each section there are some important additions.

The Section on Nervous Diseases by Archibald Church has about 16 additional pages, the increased space being distributed as follows: a few lines are devoted to the more recent theories as to nerve regeneration; intermittent limping receives about a page; a special chapter of $2\frac{1}{2}$ pages is added in which *Herpes-zoster* is given its proper place as an acute hemorrhagic inflammation of the corresponding root ganglia; two new cuts give an excellent illustration of *Herpes-zoster*; a new paragraph treats of *myoclonus epilepsys*; the *stereognostic sense* receives mention omitted in previous editions.

The section as a whole is most admirably adapted to the use of a beginner in the study of nervous diseases.

The Section on Mental Diseases by Frederick Peterson seems to be identical with that of the former edition excepting for the addition of *A Review of Recent Problems of Psychiatry* by Adolf Meyer, Director of the Pathological Institute of the New York State Hospitals. Here we have to do with an essay deserving the most careful attention. It occupies some 40 pages which, in contrast with the remainder of the book, are in fine print. The authorship of the review is heralded only by the foot-note on the first page, but the author is revealed on every page by the characteristic clearness of thought. Why an article of such value to the experienced psychiatrist should be relegated to a book professedly compiled for "the medical student and general practitioner" is not clear. It is the man who has endeavored to adapt the set forms of psychiatry to his own experience, or his own experience to the set forms of psychiatry, who will find solace and inspiration in Adolf Meyer's words. His thought goes home especially to him who has sought to classify patients according to the systems of different authors and who has drunk disappointment deep from the cup of confusion and contradiction. For the ordinary medical student or general practitioner the beautiful demonstration of contrast

and harmony, light and shadow, weakness and strength of the work of Kraepelin, Wernicke and Ziehen must have but an imperfect meaning. Meyer has given us separately in bold lines a sketch of the product of each of these authors and then has added a rarely fine composite photograph of them all with a kinetoscopic exhibition of their methods; but these pictures must fall upon partially blind eyes if the work is read only by those for whom it was intended, for appreciation of such can only come to those who have been in constant contact with erratic patients and erratic authors. The double entry, countercheck system of Wernicke, for instance, must form some approach to a meaningless jumble for one who has not in his extremity endeavored to gain a perspective by throwing sidelights from all conceivable directions upon such psychological creations as consciousness, comprehension and reason.

But let us not be unfair. If the medical student—the future psychiatrist—reads this review of many systems before he begins the study of one, he may escape the duress of classification and “save his soul alive.” He may learn that his work has not begun nor ended with nosology and he will certainly begin with a fair warning—a warning repeatedly and insistently given by Meyer—not to fall into complacent satisfaction with the application of loose and vague terms to still more loose and vague conceptions.

But what of the subject-matter of the essay? What is discussed and how? Answering the latter question first, it is all well discussed. As to the former question, the only possible reply is that the article is too meaty for abstraction; it is already a quintessence and an attempt at further concentration would only bring about dissolution. Let him who reads, run and read and he will profit thereby. It will suffice to say that Meyer has pointed out with fairness and nicety the strength and the weakness of the three authors named.

His interpretation of Kraepelin is most opportune since there has been such a wild rush here in America to the building of a somewhat tinsel Kraepelin shrine. He points out, what has been patent to many, that there is a strong tendency toward the “out-Kraepelining” of Kraepelin and that statements and principles have been attributed to that author which must be painful to one who has shown so much conservatism and so little dogmatism as Kraepelin. Meyer happily compares the method of study of Kraepelin—that is, the endeavor to correlate the results of careful observation with course and outcome and the construction therefrom of *disease entities*—to the cutting of a longitudinal section, while Wernicke’s method gives us a cross section. He claims for all the writers discussed “the conscientious effort to start in the first place from sets of patients and to adapt their descriptions and terms to what they see, without any unnecessary regard for traditional classification of words”; he finds the effort less obvious with Ziehen and attributes his divisions, to a great extent, to the system of available terminology. “In his general pathology the system of his association-psychology also furnishes the backbone for pathological psychology. Given the headings of the chapter in

normal psychology one can construct with ease the subheads of the chapter on pathology. This form is naturally dry and does not quite do justice to the readability of the very good observations of fact which are classified in this very systematic manner. The student may be grateful for the beautiful order; but the practitioner does not see the things as the teacher puts them down. What is to him an entity of great precision and value is torn apart here, and he naturally asks, To what advantage? The beautiful order does not dispel his fear that over the details he might fail to see the otherwise familiar and practically useful entity."

Meyer sees Wernicke's greatness in his primary effort to establish a tenable non-traditional symptomatology: "His ideal would be attained beyond doubt were it possible to demonstrate that the symptoms depend upon known properties of the organ and their derangement by disease. This is, however, really fruitful of results only when we deal with accepted knowledge or accepted hypotheses. These of Wernicke are purely tentative and probably more complicated than is advisable or necessary. . . . The feature that attracts me in Wernicke is the faithful adherence to actual observance of cases. There are no composite pictures of entire groups (in which it is so easy to juggle the symptoms a little for the sake of creating a clear picture), but always definite case records on which he builds his discussions and conclusions. There is no ready made coat to fit all cases covered by a traditional name, but a statement of the material and general features in the few cases and directions as to how to find and use these in others. . . . For the time, we repeat our expressions of indebtedness to Wernicke for having shown us a way to emancipate ourselves from traditional haziness, and for giving us some point of view which may have value when our knowledge of correlation of brain and mind becomes a more useful and imperative problem than it is now, for want of facts."

"The consequences of the 'spatial' interests show clearly in Wernicke's presentation of the disease types. But he gives most excellent sketches of temporary states—just what one needs and wants to get at in actual life in examining a patient. His descriptions, as far as I am aware, have no equal in the entire literature of psychiatry. . . . His whole attitude . . . is one *not bent on classifications*, but on understanding of the cases."

Meyer finds the most suggestive and refreshing impetus of Kraepelin's departure not so much in the creation of pathologically analyzed and unmistakably understood types, but in the spirit of emphasis of that which is medically most important. "That impetus will never be lost by one who has been affected by it. Descriptions of symptom complexes without descriptions of evolution and outcome will always be unsatisfying, and we crave for complete accounts of individual cases."

Of Wernicke the author says, "Notwithstanding this strictly observing attitude and keen disquisition on the facts, one becomes conscious of immense difficulties in the way of a thorough understanding of psychoses through the mere analysis of the nature of the symptoms. A great longing for simplicity begins to clamor in us, and who would not hail the very

attractive structure held out to us by Kraepelin, if it were not for the fact that clinical experience seems to remonstrate against simplicity where things are actually very complex? . . . The merit of Wernicke lies in his faithful and accurate descriptions and these place him above all reproach and question; and he certainly removes the blinding dogma of traditional nomenclature from a number of very important facts. But his system of analysis seems to totally blind him to very important issues which he might well begin to utilize."

In regard to the possibility of predicting an outcome in individual cases Meyer's own words are valuable. "As a matter of fact every alienist of experience will point to patients in whom secondary dementia can be foretold. Unfortunately, reasons are but rarely given. This is, however, one of the best methods of training in psychiatry: *to formulate in exact terms the facts which guide us in prognosis, to give the reasons why they do so, and to test these reasons on the basis of final results.*"

In conclusion the author says, ". . . There is, however, so much harmony in what has been achieved by Kraepelin and Wernicke that we may look to the recent products of psychiatric work with the feeling that the confusion of words and the appearance of abstruseness will cease more and more and in a measure as we keep to the observation of actual cases, and records which cover the useful distinctions."

"In closing this review there are two warnings to which the reader's attention should be called. The first is: Beware of definitions which one is tempted to make from the sound of words! . . . The second warning is: Beware even of the definition given by any special author!"

After all, perhaps the most valuable impression one derives in reading such an article as that of Meyer is the necessity which imposes itself upon the young student and the older student to read not this or that work alone but to keep in touch with all these larger men. For the reviewer the combination of the methods of such men as Wernicke and Kraepelin—methods which in the last analysis are after all not so far apart—has helped over many hard places.

It is only fair to the author to say that it is not only what he tells us of the other psychiatrist that helps us but that we are stimulated and strengthened by his own broad unbiased attitude. Meyer shows habits of thought which lead us to hope for something more from him. His caution, breadth of view and keen conception of the *Leitmotif* in the work of others, combined with a long and large experience, ought to lead beyond the preparation of introductions for the books of others to the publication of a work which would show us more of his own most excellent methods and the conclusions and results therefrom derived.

W. McD.

A Narrative of Medicine in America. By JAMES GREGORY MUMFORD, M. D. (Philadelphia and London: J. B. Lippincott Company, 1903.)

This is not a systematic history, nor is it complete; it omits many important personages and events and it is written for the laity as well

as for the profession. What the author aims at is a popular narrative which shall sketch for the general reader, in pleasant style and without too much technicality, a few of the typical men and events that belong to the history of medicine in this country. Thus a connected and more or less complete picture is given of the subject down to about the year 1850. Of the seventeen chapters, one is devoted to the seventeenth century, seven to the eighteenth, eight to the nineteenth, while the last considers "Some Tendencies in Modern Medicine." We note a few errors, but on the whole the book is remarkably accurate, and there are indications of careful research and sifting of evidence, which place it in the category of authoritative historical publications. It is more comprehensive and takes a wider range than Packard's work. The author writes in terse, vigorous and dramatic style and in the best English. He is particularly happy in his sketches of men. We would particularly cite those of Samuel Bard, Zabdiel Boylston, Nathaniel Chapman, Daniel Drake, Alexander Garden, David Hosack, James Jackson, Sr., Ephraim McDowell, John Morgan, Valentine Mott, P. S. Physic, Benjamin Rush, William Gibson, and John and John C. Warren. We note here, as in the case of Packard, the almost entire absence of allusion to Maryland. Perhaps in subsequent editions the author may find something to say about the doctors who have dwelt about the Chesapeake. Of course New England predominates, as we might expect in a writer hailing from that section, but this is less marked than might *a priori* have been expected. It is singular that American writers upon historical subjects cannot divest themselves of local influences. The *historian* of American Medicine has not yet arisen. He must be a man of the German type—patient, laborious, minute, impartial, exhaustive. He must not be afraid of hard work and he must bide his time. He must not be content with the records of Philadelphia and Boston, but must seek everywhere for his materials. He must tell us much of the village and rural practitioner and of the condition of the profession throughout the country, for not all the best work was done in town and city.

But incomplete as it avowedly is, Dr. Mumford's work has a distinct value, which insures it welcome and success. Its charm of style and language will make it widely read and will contribute to impress upon all the importance of a study of the past, which in this hurrying and boastful age is so much neglected; and, not least, they will help powerfully to rescue the virtues and services of many noble men whose memory should be kept green among us, but whom our own neglect has helped to consign to oblivion. The book is well gotten up and is dedicated to Dr. Osler.

E. F. C.

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